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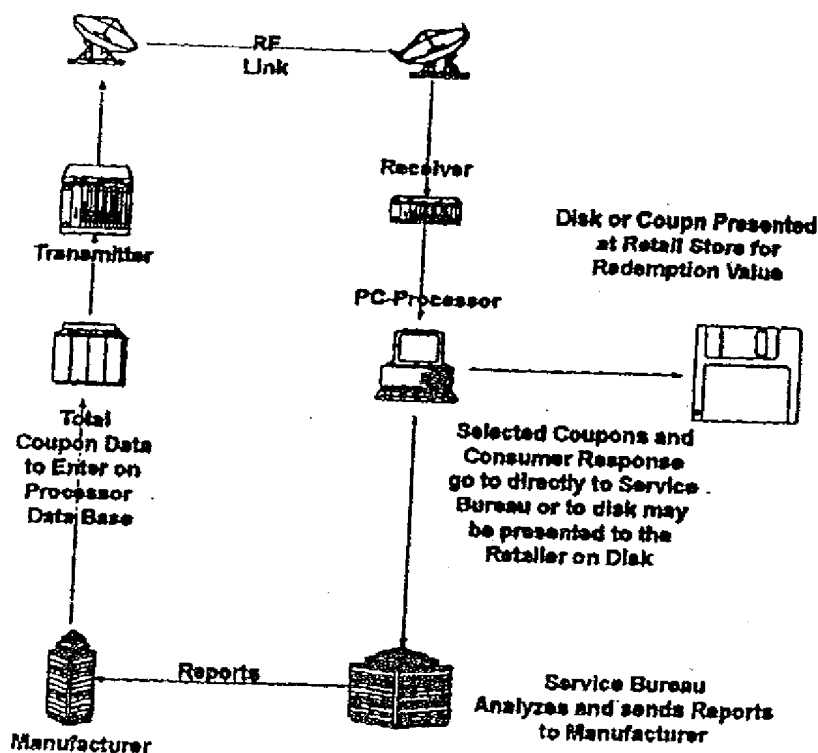
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(57) Abstract

A distribution and acquisition system is disclosed for providing incentive information via a medium. The system includes a receiver for accessing the incentive information on the medium and a processor for selecting and releasing portions of the incentive information upon the occurrence of the event that determinants, present in the processor, are addressed. The processor selects portions of the incentive information in response to the addressing of determinant. An input device, connected to the processor, is used for inputting response information necessary to address the determinants. The input device is also used for inputting selection information into the processor. An output device is connected to the processor for generating an output corresponding to the portions of the incentive information selected by the processor. In one embodiment a transmitter, such as a radio transmitter, is connected to a network and is used to receive the incentive information. In another embodiment, a second processor is located remote from the first processor but connected in some fashion. In such an embodiment, the second processor receives the response information and generates a structured output reflective of the response information. It is especially preferred for the present invention to provide an output, such as a coupon, which is redeemable for some benefit.



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## INCENTIVE BASED INFORMATION GENERATION SYSTEM

### FIELD OF THE INVENTION

The present invention relates to the field of consumer research. More particularly, the present invention  
5 relates to the generation and acquisition of consumer preference, purchasing, profile and product improvement information.

### BACKGROUND OF THE INVENTION

Presently the couponing industry uses as its  
10 operating vehicle a standard printed coupon or "chit," typically issued in a local newspaper, magazine, direct mail, and etc. The purpose of the coupon is to market a producers product to consumers. Some innovative coupon methods have included just repeating a slogan at the store for the benefit  
15 of a discount price to drawing a coupon freehand and offering it upon purchase. In the past few years, a few companies have been posting coupons on the on-line computer networks. Some examples on the World Wide Web are "TriMark of Hawaii, Inc." and a new service "Coupons Online". Both services offer only  
20 a posting of various coupons that can be downloaded and printed for use in stores. The novel invention to be discussed provides a much more encompassing and captures much more, and

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more usable marketing information.

Coupons stimulate sales and make possible a simple monitoring of product purchasing in various locals. The data resulting from contemporary couponing efforts is limited to 5 local areas, counties, states, and regions. The amount of specific derived information generated by such efforts is minimal. The major real value of contemporary coupons is the promotion of products.

#### SUMMARY OF THE INVENTION

10       The above noted disadvantages are overcome by a distribution and acquisition system which provides incentive information via a medium. The system includes a receiver for accessing the incentive information on the medium and a processor for selecting and releasing portions of the incentive  
15 information upon the occurrence of the event that determinants, present in the processor, are addressed. The processor selects portions of the incentive information in response to the addressing of determinants. An input device, connected to the processor, is used for inputting response information necessary  
20 to address the determinants. The input device is also used for inputting selection information into the processor. An output device is connected to the processor for generating an output corresponding to the portions of the incentive information selected by the processor. In one embodiment a transmitter,  
25 such as a radio transmitter, is connected to a network is used to receive the incentive information. In another embodiment, a second processor is located remote from the first processor but connected in some fashion. In such an embodiment, the second processor receives the response information and  
30 generates a structured output reflective of the response information. It is especially preferred for the present

invention to provide an output, such as a coupon, which is redeemable for some benefit.

In one embodiment, the present invention consists of a couponing management and distribution system where the various food producers, for example the Campbell Soup Company, would receive remuneration in the form of completed surveys for the coupons they issue to consumers, these surveys being performed by the same consumers. The consumer will receive remuneration in the form of product discounts for surveys they complete. The product choices and product surveys are presented in a computer having computer software that interacts with the consumer and their family food buying habits. This system is not limited to food products. Any product may and potentially will be addressed by this system.

The system acquires data on discounting of products, automatically organizes and prompts the consumer with survey questions, provides reports, discount sheets, and coded stubs for scanning into store computer systems providing the consumers discounts. The survey questions are processed and analyzed by a CO and provided to manufacturers for consideration and further analysis. The surveys are very valuable to the manufacturer in determining strategies of product marketing and sales.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be better understood, and its numerous objects and advantages will become apparent to those skilled in the art by reference to the following detailed description of the invention when taken in conjunction with the following drawings, in which:

Fig. 1 is a diagrammatic view of a system constructed in accordance with the present invention.

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**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

The following description of the preferred embodiments is made by way of example to food purchase discounts provided by active radio transmission in the form of text. Such exemplary description is for the purposes of illustrating the invention and is not intended to limit the scope of this application.

A central office of discount coupon management (CO) is designated to organize coupon data acquired from product producers. Contemporary marketing methods would require product producers to print their own coupons or assign this task to a sub-contractor. However, using the present invention, discount data acquired from the producer is processed by the CO and made available to the consumer. This is accomplished through posting the discounts for various products on a network such as the "Internet" requiring a retrieval operation. As will be shown in connection with Fig. 1, the posting of product discount information is achieved by active transmission of the data via radio or any other media available to the consumer. A computer, adapted and connected to receive the radio transmitted data, acquires the data for processing by discount coupon management software.

The software is operative so that, when it is used for the first time, the consumer will enter various products of interest that they regularly purchase at the supermarket or other product stores. The software may already contain a listing of products and the consumer need only select them from a the list. Any product not listed can be entered manually. Once entered the consumer need not enter them again, but may modify the product list at any time.

In one embodiment, the computer is connected to a

hardware board which designed and constructed to receive radio transmissions containing data from producers of supermarket products or any other products. It is envisioned that the system of the present invention can also receive data from  
5 other media such as cable T.V., phone, satellite, floppy disk, etc. In one embodiment, the data includes discount information for each product selected in the software by the consumer. As is described below, the data additionally includes inquiries directed to generate consumer feedback.

10       Upon receiving data, the software automatically correlates (links) the consumers product selections with available discount coupons issued by manufacturers and contained in the radio transmitted data. This correlation is accomplished by standard data base linking or indexing methods,  
15 which methods are well known. The discount coupons are organized and tallied for future accounting and printing. When the consumer is ready to shop at a supermarket they may choose to print those coupons that have been issued by the producers and made available by the system.

20       In one embodiment, when the consumer is alerted to a coupon for any of the products they have selected, they may be required to complete a survey asking specific questions in order to obtain use of the coupon or in order to increase the value of the coupon. When the consumer has completed the  
25 survey, the software is prompted (or triggered) to issue the coupons as a reward to the consumer. The consumer can thereafter print the coupon instantly (instant gratification) or wait until later, i.e., just before shopping.

30       The coupons may be printed in many different formats depending on use. For example, the product discount information may all be contained on one or two printed stubs.

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The stubs would include all the bar codes necessary for the discount information, as well as, the information generated by the consumer in response to the survey. The bar coded stubs may be scanned at the market, into the supermarket computer, and used for discounts when the consumer purchases these products. This will speed up the market check-out line and make it easier for the consumer by not having to carry 30 or so coupons that have to be organized. The discounts may also be stored in the supermarket computer until the consumer uses these discounts by surrendering the stub at the door.

The survey envisioned by the present invention may address information such as questions concerning habits, complaints, age, hobbies, etc. All this information is very valuable to the producers. The consumer may elect to participate in an advanced survey, such as answering questions about consumption data. This is data on products purchased and just how much of a product is actually consumed. It can be seen that many other aspects could be addressed by this system.

The system of the present invention is comprised of three major components. They are computers, management software and the computer communications interface, all of which are used at the retailer level, the manufacturers level and the consumer level. In the embodiment being described, the computer communications interface is by radio transmission, however, the invention is not limited to this media. The radio sub-carrier interface is preferably in the form of a board that is connected to the computer. This may be accomplished by plugging the board into an available buss slot, or any other suitable means of connection. The data that is received by the radio sub-carrier board is transferred to the computer system



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for the purpose of being acted upon by software specifically designed to manage this data.

The data received by the board emanates from a local radio station. This radio transmission may be achieved by any means of radio frequency communication including TV sub-carrier. The radio station is issued the data to be transmitted to the consumer. This transmission is made using batch or recirculation loop techniques such that the data is either transmitted periodically as a batch or continuously as a recirculating loop.

When the consumer turns on their computer the radio board is enabled to receive the latest data on discounts. Any duplicates are disregarded while the new data updates the software. The consumer's computer and software discussed herein may be in the form of a stand alone unit or a dedicated hardware and firmware device specifically used for this function. The computer need not be limited to a P.C. but may be any device suitable to perform the functions presented herein.

Once the data is received by the radio sub-carrier board, demodulated and converted, if necessary, to an appropriate digital form, it is directed to the computer where it is acted upon by various software routines in order to organize the data. This organization consists of validating new data, adding, sorting and or categorizing data, causing or triggering activities to be performed by the consumer, screen displays, and printing functions.

Upon receipt of new data, the software causes the computer to store the data in an appropriate location in a database. A database is a means by which data may be stored, organized, reorganized, formatted, sorted, and prepared for

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display or printing, and is well known. New data is identified by comparing the data received by the radio sub-carrier board to that of the existing data within the database. This comparison may be made by a simple exact match (letter for  
5 letter) or any other match method. Such software matching methods are generally known.

Once the new data is accepted and entered into the database, it is structured in an appropriate manner to accommodate the preferred format of the system. The format may  
10 vary depending on the market or products being addressed. The consumer can access a report showing all new potential discounts or incentives which will become actual discounts after completing the survey for each discount. After completing a survey, the consumer is immediately rewarded by  
15 a running statement of money earned (total discounts). It is also envisioned within the scope of the present invention that a complete accounting of costs for purchased goods is made available at this time. Since consumers may be assigned identifying information, the present invention also makes it  
20 possible for the receivers of consumer information to respond directly to a particular consumer or group of consumers with additional incentives or more detailed responses, for example, a response to a consumer complaint. Such a system also would permit consumer notification by retailers or manufacturers of  
25 exclusive sale opportunities.

During the completion of the survey, it is envisioned that the consumer may also be able to assess the desirability of purchasing certain products in view of annotated retailer or manufacturer information such as historical analysis, as  
30 well as, quality, availability, or health related information.

Once the consumer has accrued discounts and desires

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to purchase the corresponding products, the software generates a printout of all coupons or discount information. The printout generated by the software may also include the identification of stores having the products they desire, the last price, and possibly the location of the product within the store.

It is also envisioned that the printed coupon contain bar coding or other coding formats that may be scanned into the laser scanners at the checkout counters. The total discount may then be automatically tallied and subtracted from the total bill. This will greatly speed the process of checkout.

The surveys completed by the consumer in response to the software of the present invention are capable of being printed for mailing to the product producer or can be transmitted by modem to the CO for processing and transferring to the product producer. The survey responses may be sold by the CO as general information to retailers, manufacturers and other marketing information gathering organizations.

A distribution and acquisition system 10 is shown in Fig. 1. Incentive information, i.e., coupon information redeemable at a retailer such as a super market, is made available via a medium. In the preferred embodiment, incentive information is transmitted to a receiver. The receiver accesses the incentive information. Although the preferred embodiment is a radio transmission the medium can be any vehicle for transmitting information, for example the receiver could be a modem and the medium would be a telecommunications system.

A processor is connected to the receiver, for selecting portions of the incentive information and for releasing those portions upon the occurrence of an event. It

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is preferred for the event to be the occurrence of determinants, present in the processor, being addressed. The processor also selects portions of the incentive information in response to selection information contained in said  
5 processor. Selection information could be the identification of consumer goods, such as groceries, wherein the selected goods are identified and stored in the processor. In such a situation the processor would only select coupon data relating to those particular goods, rather than selecting all available  
10 data.

An input device is connected to the processor for inputting response information to the processor necessary to address the determinants and for inputting selection information into the processor. Response information is  
15 preferably the consumer responses to various question (determinants) designed to elicit information that manufacturers are seeking about their products.

An output device is connected to the processor for generating an output corresponding to the portions of the  
20 incentive information selected by the processor. Such output can take the form of printing coupons or even storing discount or coupon information on a magnetic media for presentation by the consumer at a retail establishment.

It is also envisioned that the present invention  
25 would include a transmitter connected to a network. In such a situation, the receiver would receive the incentive information by connecting to the network. The network could be any telecommunications system such as the INTERNET.

In the embodiment utilizing a radio transmitter, the  
30 transmitter may be located remote from the receiver. In such an arrangement, it is possible for the radio transmitter to

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only transmit certain portions of the incentive information to a given receiver for release by said processor. In other words, rather than the processor making selections from the body of incentive data, such selections could be made at a location remote from the processor and only selected information transmitted.

It is also envisioned that a second processor would be provided remote from the first processor. The second processor, however, would be connected to receive all response information generated in the system and for generating a structured output reflective of such collected information. A structured output could, for example, take the form of a report describing the results of an analysis of the collected information.

It is also preferred for the determinants contained in the processor to be free formed fields adapted to accept any comment. In such a situation, the addressing of the determinants is the provision of a comment via the input device to the free formed field.

While the invention has been described and illustrated with reference to specific embodiments, those familiar with the art will recognize that modification and variations may be made without departing from the principles of the invention as described herein above and set forth in the following claims.

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I claim:

1. A distribution and acquisition system, wherein incentive information is made available via a medium, said system, comprising:

a receiver for accessing said incentive information on said medium;

a processor, connected to said receiver, for selecting portions of said incentive information and for releasing said portions of said incentive information upon the occurrence of the event that determinants, present in said processor, are addressed and wherein said processor selects portions of said incentive information in response to selection information contained in said processor;

an input device, connected to said processor, for inputting response information to said processor necessary to address said determinants and for inputting selection information into said processor; and

an output device, connected to said processor, for generating an output corresponding to the portions of said incentive information selected by said processor.

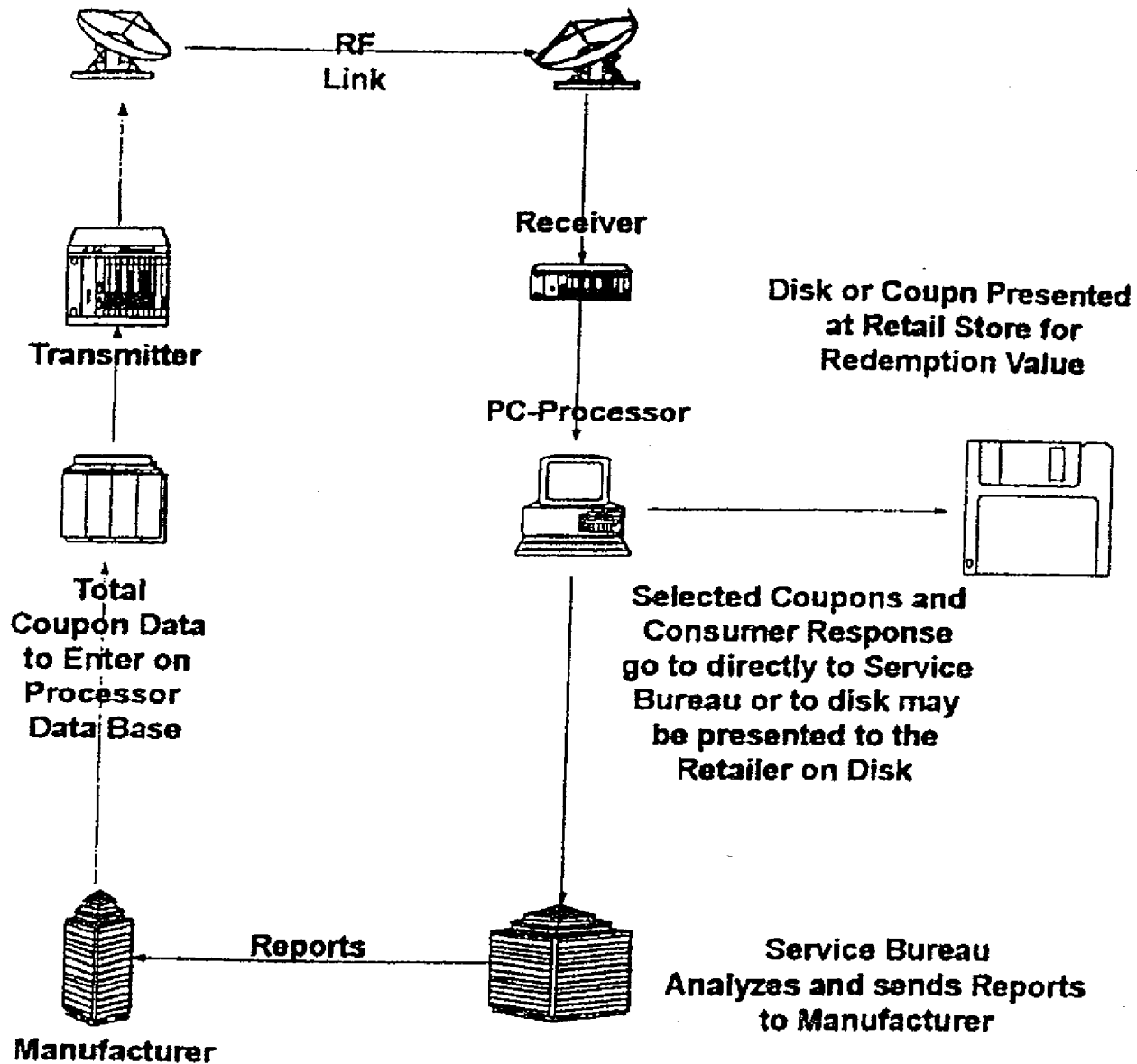
2. The system of claim 1, further comprising a transmitter connected to a network, wherein said receiver receives said incentive information by connecting to said network.

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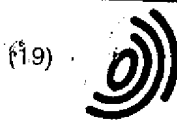
3. The system of claim 1, further comprising a radio transmitter, for transmitting said incentive information, wherein said receiver receives said incentive information as a radio transmission.
4. The system of claim 3, wherein said radio transmitter is located remote from said receiver and wherein said radio transmitter only transmits certain portions of said incentive information to said receiver for release by said processor.
5. The system of claim 1, further comprising a second processor, located remote from said first processor, connected to said processor so that said second processor receives said response information and for generating a structured output reflective of said response information.
6. The system of claim 5, wherein said receiver is assigned identifying information and wherein said identifying information is stored in said second processor so that said second processor is capable of identifying said receiver.
7. The system of claim 1, wherein said determinants contained in said processor are free formed fields adapted to accept any comment and wherein the addressing of said determinants is the provision of a comment via said input device to said free formed field.
8. The system of claim 1, wherein said output is redeemable for some benefit.
9. The system of claim 7, wherein said output comprises coupons.

## Coupon System

### Fig. 1







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(54) **Method and system for regulating discounts on merchandise distributed through networked computer systems**

(57) The present invention provides a method and system for regulating discounts on merchandise distributed through networked computer systems. The method and system involve the use of discount coupons valid toward the repurchase of the merchandise. These discount coupons include mechanisms for verifying the validity of the coupons. A system in which the present invention operates includes a vendor computer system (10) and a user computer system (12) connected via a network (14). The vendor and user computer systems (10, 12) each include a computer (16, 26) connected to a display device (18, 28), a keyboard (20, 30), and a secondary-storage device (22, 32). A vendor discount regulator (24) and a user discount regulator (34) are stored in the vendor/user secondary storage devices (22, 32) for execution by the vendor/user computers (16, 26). In operation, when a user desires to purchase merchandise, the user creates a request to purchase the merchandise and sends the request to purchase to a vendor. The vendor creates and encrypts a discount coupon valid toward the repurchase of the merchandise at a later time and sends the encrypted discount coupon together with the merchandise to the user. The user decrypts the discount coupon and stores the discount coupon in the user computer system (12). Later, when the user desires to repurchase the merchandise, the user creates a request to repurchase the merchandise and sends the request to repurchase to the vendor. The vendor decrypts the request to repurchase and verifies certain information regarding the purchase and the repurchase of the merchandise. After verifying the information, the vendor sends the merchandise to the user.

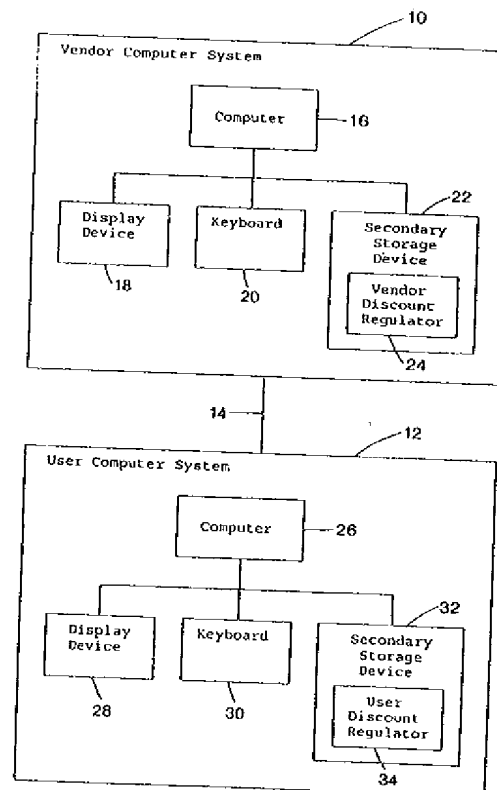


FIG. 1

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## Description

### Field of the Invention

The present invention relates generally to networked computer systems and, more particularly, to a method and system for regulating discounts on merchandise distributed through networked computer systems.

### Background of the Invention

Merchandise is commonly distributed through networked computer systems. For example, a user can purchase a copy of or access to an article, a magazine, a book, a film, a sound recording, a software product, or a database through a networked computer system. These types of merchandise are sometimes referred to as intellectual property because their value is in the content of the merchandise as opposed to the physical merchandise itself.

After purchasing and using merchandise, the user may not wish to keep a copy of the merchandise on the user's computer system. If the merchandise requires a relatively small amount of storage space (e.g., an article), the user may not mind keeping a copy of the merchandise on the user's computer system. If the merchandise requires a relatively large amount of storage space (e.g., a film or a software product), the user may not wish to keep a copy of the merchandise on the user's computer system.

The user may wish, however, to later use the same merchandise. If the user is forced to repurchase the merchandise at its full price in order to reuse the merchandise, the user may decide to keep a copy of the merchandise on the user's computer system after the original purchase (even though the user does not wish to do so). If the user could repurchase the merchandise at a reduced price, the user may decide to not keep a copy of the merchandise on the user's computer system and to later repurchase the merchandise when the user desires to reuse it.

As a result, a system which allows users to repurchase merchandise at a reduced price is desirable to the user. Such a system is also desirable to the vendor. One reason why such a system is desirable to the vendor is that it encourages users to repurchase merchandise instead of keeping a copy of the merchandise on the user's computer system. If the user does not keep a copy of the merchandise, there is less chance that the merchandise will be copied by third parties (which would result in a total loss of revenue for the vendor). Another reason why such a system is desirable to the vendor is that the vendor receives additional revenue from the resale of the merchandise to the user.

Even though such a system is desirable to the vendor, there must be an efficient method for regulating the repurchase in order to make the system feasible for the

vendor. One possible solution is for the vendor to maintain a database including information regarding each purchase of merchandise, such as the name of the purchaser and the merchandise that was purchased. For privacy reasons, this solution is not desirable. Therefore, a need exists for a method and system for regulating discounts on merchandise distributed through networked computer systems.

### Summary of the Invention

The preferred embodiment of the present invention provides a method and system for regulating discounts on merchandise distributed through networked computer systems. The method and system involve the use of discount coupons valid toward the repurchase of the merchandise. These discount coupons include mechanisms for verifying the validity of the coupons.

A system in which the preferred embodiment of the present invention operates includes a vendor computer system and a user computer system connected to one another via a network. The vendor computer system includes a computer connected to a display device, a keyboard, and a secondary storage device. A vendor discount regulator is stored in the vendor secondary storage device for execution by the vendor computer. Similarly, the user computer system includes a computer connected to a display device, a keyboard, and a secondary storage device. A user discount regulator is stored in the user secondary storage device for execution by the user computer.

In operation, when a user desires to purchase merchandise, the user creates a request to purchase the merchandise and sends the request to purchase to a vendor. The vendor creates and encrypts a discount coupon valid toward the repurchase of the merchandise at a later time and sends the encrypted discount coupon together with the merchandise to the user. The user decrypts the discount coupon and stores the discount coupon in the user computer system.

Later, when the user desires to repurchase the merchandise, the user creates a request to repurchase the merchandise and sends the request to repurchase to the vendor. The vendor decrypts the request to repurchase and verifies certain information regarding the purchase and the repurchase of the merchandise. After verifying the information, the vendor sends the merchandise to the user.

The invention will now be further described, by way of example, with reference to the accompanying drawings in which:-

Figure 1 is a block diagram illustrating the components of a system in which the preferred embodiment of the present invention operates; Figure 2 is a flowchart generally illustrating the preferred steps performed in the operation of the system of Figure 1;

Figure 3 is a flowchart illustrating in greater detail the preferred step of creating and sending a request to purchase merchandise to a vendor, as generally illustrated in Figure 2;

Figure 4 is a flowchart illustrating in greater detail the preferred step of creating, encrypting, and sending a discount coupon to a user, as generally illustrated in Figure 2;

Figure 5 is a diagram illustrating the sections of the discount coupon and how each section is encrypted;

Figure 6 is a flowchart illustrating in greater detail the preferred step of decrypting and storing the discount coupon, as generally illustrated in Figure 2;

Figure 7 is a flowchart illustrating in greater detail the preferred step of creating, encrypting, and sending a request to repurchase merchandise to the vendor, as generally illustrated in Figure 2;

Figure 8 is a diagram illustrating the sections of the request to repurchase merchandise and how each section is encrypted; and

Figures 9A and 9B collectively are a flowchart illustrating in greater detail the preferred step of decrypting and verifying the request to repurchase merchandise, as generally illustrated in Figure 2.

#### Detailed Description of the Preferred Embodiment

The preferred embodiment of the present invention provides a method and system for regulating discounts on merchandise distributed through networked computer systems. The method and system involve the use of discount coupons valid toward the repurchase of the merchandise. These discount coupons include mechanisms for verifying the validity of the coupons.

A system in which the preferred embodiment of the present invention operates is illustrated in Figure 1. The system includes a vendor computer system 10 and a user computer system 12. The vendor computer system 10 and the user computer system 12 are connected to one another via a network 14.

The vendor computer system 10 includes a computer 16 for controlling the operation of the vendor computer system. The computer 16 typically includes a central processing unit and a primary storage device (not separately shown). The computer 16 is connected to a display device 18, a keyboard 20, and a secondary storage device 22. The secondary storage device 22 may be any of various well-known secondary storage devices, such as a CD-ROM, a diskette, or a hard disk. A vendor discount regulator 24 is stored in the secondary storage device 22 for execution by the computer 16.

Similarly, the user computer system 12 includes a computer 26 for controlling the operation of the user computer system. The computer 26 typically includes a central processing unit and a primary storage device (not separately shown). The computer 26 is connected to a display device 28, a keyboard 30, and a secondary

storage device 32. The secondary storage device 32 may be any of various well-known secondary storage devices, such as a CD-ROM, a diskette, or a hard disk. A user discount regulator 34 is stored in the secondary storage device 32 for execution by the computer 26.

For the sake of simplicity, the vendor computer system 10 and the user computer system 12 of the present invention have each been illustrated with a single computer (16, 26), a single display device (18, 28), a single keyboard (20, 30), and a single secondary storage device (22, 32). However, one of ordinary skill in the art will appreciate that the vendor computer system 10 and/or the user computer system 12 could include any number of computers and other components (and typically, would include a multiple number of computers and other components). These computers and other components would be connected to one another either directly or via the network 14.

Further, the vendor computer system 10 and/or the user computer system 12 could include components other than those separately shown. For example, the vendor computer system 10 and/or the user computer system 12 could include a variety of input/output ("I/O") devices (other than the display device (18, 28), the keyboard (20, 30), and the secondary storage device (22, 32) separately shown). These components of computer systems are well-known in the art and will not be discussed in greater detail.

Figure 2 generally illustrates the preferred steps performed in the operation of the system of the present invention. Initially, when a user desires to purchase merchandise, the user creates a request to purchase the merchandise and sends the request to purchase to a vendor (step 202). The vendor creates and encrypts a discount coupon valid toward the repurchase of the merchandise at a later time and sends the encrypted discount coupon together with the merchandise to the user (step 204). The user decrypts the discount coupon and stores the discount coupon in the user computer system (step 206).

Later, when the user desires to repurchase the merchandise, the user creates and encrypts a request to repurchase the merchandise and sends the request to repurchase to the vendor (step 208). The vendor decrypts the request to repurchase and verifies certain information regarding the purchase and the repurchase of the merchandise (step 210). After verifying the information, the vendor sends the merchandise to the user (step 212).

In discussing the preferred steps performed in the operation of the system of the present invention, the vendor and the user are referred to as performing certain steps. However, one of ordinary skill in the art will appreciate that the steps referred to as being performed by the vendor could be performed by the vendor discount regulator 24 and the steps referred to as being performed by the user could be performed by the user discount regulator 34. Therefore, all references to the

vendor throughout this specification shall be understood as including a reference to either the vendor or the vendor discount regulator 24, and all references to the vendor performing certain steps shall be understood as including a reference to either the vendor or the vendor discount regulator 24 performing the steps. Similarly, all references to the user throughout this specification shall be understood as including a reference to either the user or the user discount regulator 34, and all references to the user performing certain steps shall be understood as including a reference to either the user or the user discount regulator 34 performing the steps.

As discussed above, the method and system of the present invention involve the encryption and decryption of certain information. In the preferred embodiment of the present invention, two types of encryption systems are used. These encryption systems are: (1) a secret-key system, and (2) a public-key system. With a secret-key system, a single key is used for both encrypting and decrypting information. A secret-key system is sometimes referred to as a private-key, a symmetric-key, or a single-key system. With a public-key system, two different keys are used for encrypting and decrypting information. In this system, one key is public and the other key is private. Information that is encrypted with one key can be decrypted with the other key. A public-key system is sometimes referred to as an asymmetric-key or a two-key system. As used herein, secret-key refers to the single key in a secret-key system and public-key and private-key refer to the two keys in a public-key system.

In the preferred embodiment of the present invention, one secret-key system and two public-key systems are used. The secret-key system is used by the vendor to encrypt certain information so that no one but the vendor can understand it. The key in this system will be referred to as a vendor secret-key. The public-key systems are used by the vendor and the user to encrypt certain information so that each party can understand and verify information sent to it by the other party but no third party can understand it. In one public-key system, the vendor selects and is the owner of the keys and in the other public-key system, the user selects and is the owner of the keys. Both the vendor and the user make one key public and keep the other key private. The keys in the first system (where the vendor selects the keys) will be referred to as a vendor public-key/vendor private-key and the keys in the second system (where the user selects the keys) will be referred to as a user public-key/user private-key. In the preferred embodiment of the present invention, the public-key systems are based on the well-known RSA algorithm. A discussion of the RSA algorithm is found in U.S. Patent No. 4,405,829 to Rivest et al. However, one of ordinary skill in the art will appreciate that other public-key systems could be used.

Using the public-key systems, one party (e.g., the vendor) can encrypt information using the other party's (e.g., the user's) public-key and only the other party (e.g., the user) can decrypt the information using that par-

ty's (e.g., the user's) private-key. In this situation, the secrecy of the information is ensured because only the other party (e.g., the user) should be able to decrypt information that was encrypted using that party's (e.g., the user's) public-key.

Alternatively, one party (e.g., the user) can encrypt information using that party's (e.g., the user's) private-key and the other party (e.g., the vendor) can decrypt the information using the first party's (e.g., the user's) public-key. In this situation, the source of the information is ensured because only the first party (e.g., the user) should be able to encrypt information that can be decrypted using that party's (e.g., the user's) public-key.

Additionally, information can be encrypted more than once using a combination of keys to ensure both the secrecy and the source of the information. For example, one party (e.g., the user) can encrypt information using that party's (e.g., the user's) private-key and then encrypt the information using the other party's (e.g., the vendor's) public-key. The other party (e.g., the vendor) can decrypt the information using that party's (e.g., the vendor's) private-key and then decrypt the information using the first party's (e.g., the user's) public-key. In this situation, the secrecy of the information is ensured by the second encryption and the source of the information is ensured by the first encryption. Although this discussion has stated that the secrecy and the source of the information are ensured through the above steps, encryption schemes are not completely secure. The security of encryption schemes can be compromised if the secret-key (in a secret-key system) or the private-key (in a public-key system) becomes known to a party other than the owner of the key.

Figure 3 illustrates the preferred step of creating the request to purchase the merchandise and sending the request to purchase to the vendor (step 202) in greater detail. When the user desires to purchase the merchandise from the vendor, the user creates the request to purchase the merchandise (step 302). In a preferred embodiment of the present invention, the request to purchase includes fields for all of the information required by the vendor to complete the purchase. For example, the request to purchase may include: (1) the user's name, (2) a description of the merchandise that the user desires to purchase, (3) the computer address from which the request to purchase will be sent (and to which the merchandise will be sent), (4) a form of payment, and (5) a user public-key. After creating the request to purchase the merchandise, the user sends the request to purchase over the network from the user computer system to the vendor computer system (step 304).

Figure 4 illustrates the preferred step of creating and encrypting the discount coupon and sending the encrypted discount coupon together with the merchandise to the user (step 204) in greater detail. Figure 5 illustrates the sections of the discount coupon and how each section is encrypted. After receiving the request to purchase the merchandise from the user, the vendor cre-

ates and encrypts the discount coupon 36 valid toward the repurchase of the merchandise at a later time (steps 402-410). In a preferred embodiment of the present invention, the discount coupon 36 includes a section with user/purchase information 38 and a section with a description of the discount 40. The user/purchase information section 38 includes fields for all of the information required by the vendor to later verify the validity of the discount coupon. For example, this section may include: (1) a description of the merchandise that is being purchased, (2) the computer address from which the request to purchase was sent (and to which the merchandise will be sent), and (3) the user public-key. This section may also include a purchase date if the discount coupon is only valid for a certain period of time after the original purchase.

Initially, the vendor creates the user/purchase information section 38 of the discount coupon 36 (step 402) and encrypts this section using a vendor secret-key (step 404). Next, the vendor creates the description of the discount section 40 of the discount coupon 36 (step 406) and adds this section to the encrypted user/purchase information section 38 (step 408). The vendor then encrypts both sections of the discount coupon 36 using the user public-key (step 410). Lastly, the vendor sends the encrypted discount coupon 36 together with the merchandise over the network from the vendor computer system to the user computer system (step 412).

Figure 6 illustrates the preferred step of decrypting the discount coupon and storing the discount coupon in the user computer system (step 206) in greater detail. After receiving the encrypted discount coupon 36 from the vendor, the user decrypts the discount coupon 36 using the user private-key (step 602). The user then stores the discount coupon 36 in the user computer system (step 604). The discount coupon 36 actually includes the encrypted user/purchase information section 38 and the decrypted description of the discount section 40. The user/purchase information section 38 is still encrypted because it was encrypted twice and only decrypted once.

Figure 7 illustrates the preferred step of creating and encrypting the request to repurchase the merchandise and sending the request to repurchase to the vendor (step 208) in greater detail. Figure 8 illustrates the sections of the request to repurchase and how each section is encrypted. When the user desires to repurchase the merchandise from the vendor, the user creates and encrypts the request to repurchase the merchandise 42 (steps 702-710). In a preferred embodiment of the present invention, the request to repurchase 42 includes the discount coupon 36 and a section with user/repurchase information 44. The user/repurchase information section 44 includes fields for all of the information required by the vendor to complete the repurchase. For example, this section may include: (1) the user's name, (2) a description of the merchandise that the user desires to repurchase, (3) the computer address from

which the request to repurchase will be sent (and to which the merchandise will be sent), (4) a form of payment, and (5) the user public-key.

Initially, the user includes the discount coupon 36 (including the encrypted user/purchase information section 38 and the decrypted description of the discount section 40) in the request to repurchase 42 (step 702) and encrypts the discount coupon using the user private-key (step 704). Next, the user creates the user/repurchase information section 44 of the request to repurchase 42 (step 706) and adds this section to the encrypted discount coupon 36 (step 708). The user then encrypts the entire request to repurchase 42 using the vendor public-key (step 710). Lastly, the user sends the encrypted request to repurchase 42 (including the discount coupon 36 and the user/repurchase information section 44) over the network from the user computer system to the vendor computer system (step 712).

Figures 9A and 9B collectively illustrate the preferred step of decrypting the request to repurchase 42 and verifying certain information regarding the purchase and the repurchase of the merchandise (step 210) in greater detail. After receiving the request to repurchase the merchandise 42 from the user, the vendor decrypts the request to repurchase (steps 902-906). Initially, the vendor decrypts the request to repurchase 42 (including the discount coupon 36 and the user/repurchase information section 44) using the vendor private-key (step 902). The vendor then decrypts the discount coupon 36 (including the user/purchase information section 38 and the description of the discount section 40) using the user public-key (step 904). Next, the vendor decrypts the user/purchase information section 38 of the discount coupon 36 using the vendor secret-key (step 906).

Lastly, the vendor verifies certain information regarding the purchase and the repurchase of the merchandise (steps 908-914). More specifically, the vendor verifies that: (1) the user public-key in the user/purchase information section 38 of the discount coupon 36 is the same as the user public-key in the user/repurchase information section 44 of the request to repurchase 42 (step 908), (2) the computer address in the user/purchase information section 38 of the discount coupon 36 is the same as the computer address in the user/repurchase information section 44 of the request to repurchase 42 (step 910), (3) the merchandise described in the user/purchase information section 38 of the discount coupon 36 is the same as the merchandise described in the user/repurchase information section 44 of the request to repurchase 42 (step 912), and (4) the discount is still valid based on the purchase date in the user/purchase information section 38 of the discount coupon 36 (if the discount coupon is only valid for a certain period of time after the original purchase) (step 914).

One of ordinary skill in the art will now appreciate that the preferred embodiment of the present invention provides a method and system for regulating discounts on merchandise distributed through networked compu-

ter systems. The method and system involve the use of discount coupons valid toward the repurchase of the merchandise. These discount coupons include mechanisms for verifying the validity of the coupons.

Although the present invention has been shown and described with reference to a preferred embodiment, equivalent alterations and modifications will occur to those skilled in the art upon reading and understanding this specification. The present invention includes all such equivalent alterations and modifications and is limited only by the scope of the following claims in light of their full scope of equivalents.

#### Claims

1. A method executed in a computer system for regulating discounts on merchandise distributed through networked computer systems, the method comprising the steps of:
  - when a user purchases merchandise, creating a discount coupon valid toward the repurchase of the merchandise, the discount coupon including information regarding the user and the purchase of the merchandise;
  - encrypting the discount coupon; and
  - sending the encrypted discount coupon to the user.
2. The method of claim 1, further including the steps of:
  - when the user desires to repurchase the merchandise, creating a request to repurchase the merchandise, the request to repurchase including the encrypted discount coupon and information regarding the user and the repurchase of the merchandise; and
  - sending the request to repurchase to the vendor.
3. The method of claim 2, further including the steps of:
  - decrypting the discount coupon in the request to repurchase; and
  - verifying information regarding the purchase and the repurchase of the merchandise.
4. The method of claim 1,
  - wherein the step of creating the discount coupon includes the steps of:
    - creating a user/purchase information section of the discount coupon, and
    - creating a description of the discount section of the discount coupon; and
5. The method of claim 4, further including the step of:
  - decrypting the discount coupon so that the discount coupon includes the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon.
6. The method of claim 5, further including the steps of:
  - when the user desires to repurchase the merchandise, including the discount coupon in a request to repurchase the merchandise, the discount coupon including the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon;
  - creating a user/repurchase information section of the request to repurchase;
  - encrypting the discount coupon in the request to repurchase;
  - encrypting the encrypted discount coupon in the request to repurchase and the user/repurchase information section of the request to repurchase; and
  - sending the encrypted request to repurchase to the vendor.
7. The method of claim 6, further including the steps of:
  - decrypting the request to repurchase;
  - decrypting the discount coupon in the request to repurchase;
  - decrypting the user/purchase information section of the discount coupon; and
  - verifying information in the user/purchase information section of the discount coupon regarding the purchase of the merchandise and information in the user/repurchase information section of the request to repurchase regarding the repurchase of the merchandise.
8. The method of claim 1,
  - wherein the step of creating the discount coupon includes the steps of:
    - encrypting the user/purchase information section of the discount coupon, and
    - encrypting the encrypted user/purchase information section of the discount coupon and the description of the discount section of the discount coupon.

pon includes the steps of:

creating a user/purchase information section of the discount coupon, and  
creating a description of the discount section of the discount coupon; and 5

wherein the step of encrypting the discount coupon includes the steps of:

encrypting the user/purchase information section of the discount coupon using a vendor secret-key, and  
encrypting the encrypted user/purchase information section of the discount coupon and the description of the discount section of the discount coupon using a user public-key. 10 15

9. The method of claim 8, further including the step of:  
decrypting the discount coupon using a user private-key so that the discount coupon includes the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon. 20 25

10. The method of claim 9, further including the steps of:

when the user desires to repurchase the merchandise, including the discount coupon in a request to repurchase the merchandise, the discount coupon including the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon;  
creating a user/repurchase information section of the request to repurchase;  
encrypting the discount coupon in the request to repurchase using the user private-key;  
encrypting the encrypted discount coupon in the request to repurchase and the user/repurchase information section of the request to repurchase using a vendor public-key; and  
sending the encrypted request to repurchase to the vendor. 30 35 40 45

11. The method of claim 10, further including the steps of:

decrypting the request to repurchase using a vendor private-key;  
decrypting the discount coupon in the request to repurchase using the user public-key;  
decrypting the user/purchase information section of the discount coupon using the vendor secret-key; and  
verifying information in the user/purchase infor- 50 55

mation section of the discount coupon regarding the purchase of the merchandise and information in the user/repurchase information section of the request to repurchase regarding the repurchase of the merchandise.

12. A computer program product for regulating discounts on merchandise distributed through networked computer systems, the computer program product comprising:

computer readable program code configured to, when a user purchases merchandise, create a discount coupon valid toward the repurchase of the merchandise, the discount coupon including information regarding the user and the purchase of the merchandise;  
computer readable program code configured to encrypt the discount coupon; and  
a computer readable medium in which the computer readable program codes are stored.

13. The computer program product of claim 12, further including:

computer readable program code configured to, when the user desires to repurchase the merchandise, create a request to repurchase the merchandise, the request to repurchase including the encrypted discount coupon and information regarding the user and the repurchase of the merchandise.

14. The computer program product of claim 13, further including:

computer readable program code configured to decrypt the discount coupon in the request to repurchase; and  
computer readable program code configured to verify information regarding the purchase and the repurchase of the merchandise.

15. The computer program product of claim 12,

wherein the computer readable program code configured to create the discount coupon includes:

computer readable program code configured to create a user/purchase information section of the discount coupon, and  
computer readable program code configured to create a description of the discount section of the discount coupon; and

wherein the computer readable program code configured to encrypt the discount coupon includes:

computer readable program code configured to encrypt the user/purchase information section of the discount coupon, and computer readable program code configured to encrypt the encrypted user/purchase information section of the discount coupon and the description of the discount section of the discount coupon.

16. The computer program product of claim 15, further including: 10  
 computer readable program code configured to decrypt the discount coupon so that the discount coupon includes the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon. 15
17. The computer program product of claim 16, further including: 20  
 computer readable program code configured to, when the user desires to repurchase the merchandise, include the discount coupon in a request to repurchase the merchandise, the discount coupon including the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon; 25  
 computer readable program code configured to create a user/repurchase information section of the request to repurchase; 30  
 computer readable program code configured to encrypt the discount coupon in the request to repurchase; and 35  
 computer readable program code configured to encrypt the encrypted discount coupon in the request to repurchase and the user/repurchase information section of the request to repurchase.
18. The computer program product of claim 17, further including: 40  
 computer readable program code configured to decrypt the request to repurchase; 45  
 computer readable program code configured to decrypt the discount coupon in the request to repurchase; 50  
 computer readable program code configured to decrypt the user/purchase information section of the discount coupon; and  
 computer readable program code configured to verify information in the user/purchase information section of the discount coupon regarding the purchase of the merchandise and information in the user/repurchase information section of the request to repurchase regarding the re- 55

purchase of the merchandise.

19. The computer program product of claim 12, 5  
 wherein the computer readable program code configured to create the discount coupon includes: 10

computer readable program code configured to create a user/purchase information section of the discount coupon, and computer readable program code configured to create a description of the discount section of the discount coupon; and

wherein the computer readable program code configured to encrypt the discount coupon includes:

computer readable program code configured to encrypt the user/purchase information section of the discount coupon using a vendor secret-key, and  
 computer readable program code configured to encrypt the encrypted user/purchase information section of the discount coupon and the description of the discount section of the discount coupon using a user public-key.

20. The computer program product of claim 19, further including:

computer readable program code configured to decrypt the discount coupon using a user private-key so that the discount coupon includes the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon.

21. The computer program product of claim 20, further including:

computer readable program code configured to, when the user desires to repurchase the merchandise, include the discount coupon in a request to repurchase the merchandise, the discount coupon including the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon; computer readable program code configured to create a user/repurchase information section of the request to repurchase; computer readable program code configured to encrypt the discount coupon in the request to repurchase using the user private-key; and computer readable program code configured to encrypt the encrypted discount coupon in the



request to repurchase and the user/repurchase information section of the request to repurchase using a vendor public-key.

22. The computer program product of claim 21, further including: 5

computer readable program code configured to decrypt the request to repurchase using a vendor private-key; 10  
 computer readable program code configured to decrypt the discount coupon in the request to repurchase using the user public-key;  
 computer readable program code configured to decrypt the user/purchase information section of the discount coupon using the vendor secret-key; and 15  
 computer readable program code configured to verify information in the user/purchase information section of the discount coupon regarding the purchase of the merchandise and information in the user/repurchase information section of the request to repurchase regarding the repurchase of the merchandise. 20

23. A system for regulating discounts on merchandise distributed through networked computer systems, the system comprising: 25

a vendor computer system connected to a network, said vendor computer system including: 30

a vendor computer configured to control the operation of said vendor computer system;  
 a vendor secondary storage device connected to said vendor computer; and 35  
 a vendor discount regulator configured to:

when a user purchases merchandise, create a discount coupon valid toward the repurchase of the merchandise, the discount coupon including information regarding the user and the purchase of the merchandise, and 40  
 encrypt the discount coupon, said vendor discount regulator being stored in said vendor secondary storage device and executed by said vendor computer. 45

24. The system of claim 23, further including: 50  
 a user computer system connected to said network, said user computer system including:

a user computer configured to control the operation of said user computer system; 55  
 a user secondary storage device connected to said user computer; and  
 a user discount regulator, configured to:

when the user desires to repurchase the merchandise, create a request to repurchase the merchandise, the request to repurchase including the encrypted discount coupon and information regarding the user and the repurchase of the merchandise, said user discount regulator being stored in said user secondary storage device and executed by said user computer.

25. The system of claim 24, wherein said vendor discount regulator is further configured to:

decrypt the discount coupon in the request to repurchase; and  
 verify information regarding the purchase and the repurchase of the merchandise.

26. The system of claim 23, wherein said vendor discount regulator is further configured to:

create a user/purchase information section of the discount coupon;  
 create a description of the discount section of the discount coupon;  
 encrypt the user/purchase information section of the discount coupon; and  
 encrypt the encrypted user/purchase information section of the discount coupon and the description of the discount section of the discount coupon. 50

27. The system of claim 26, wherein said user discount regulator is further configured to:

decrypt the discount coupon so that the discount coupon includes the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon.

28. The system of claim 27, wherein said user discount regulator is further configured to:

when the user desires to repurchase the merchandise, include the discount coupon in a request to repurchase the merchandise, the discount coupon including the encrypted user/purchase information section of the discount coupon and the decrypted description of the discount section of the discount coupon;  
 create a user/repurchase information section of the request to repurchase;  
 encrypt the discount coupon in the request to repurchase; and  
 encrypt the encrypted discount coupon in the request to repurchase and the user/repurchase information section of the request to repurchase. 55

29. The system of claim 28, wherein said vendor discount regulator is further configured to:

decrypt the request to repurchase;  
decrypt the discount coupon in the request to repurchase;  
decrypt the user/purchase information section of the discount coupon; and  
verify information in the user/purchase information section of the discount coupon regarding the purchase of the merchandise and information in the user/repurchase information section of the request to repurchase regarding the repurchase of the merchandise.

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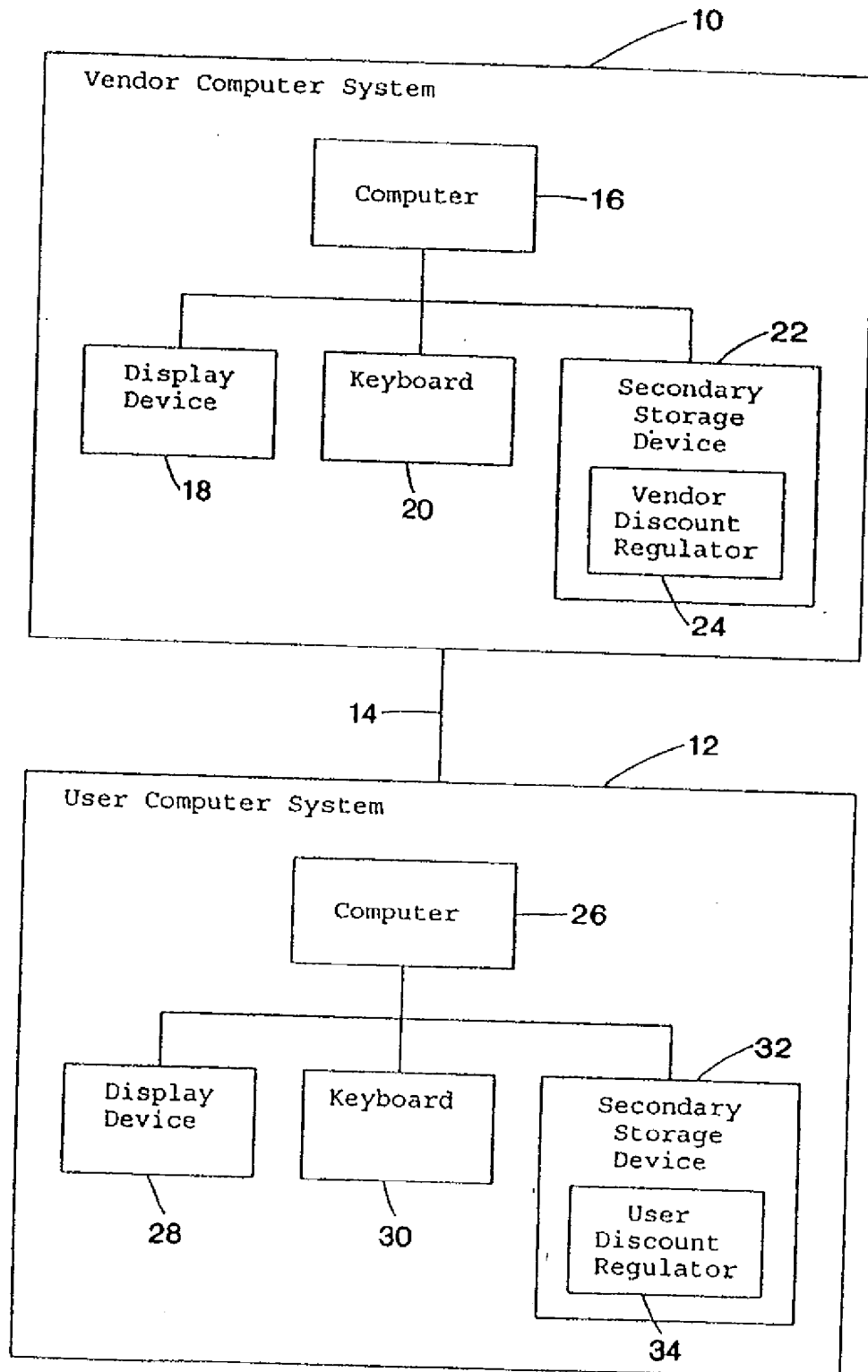


FIG. 1

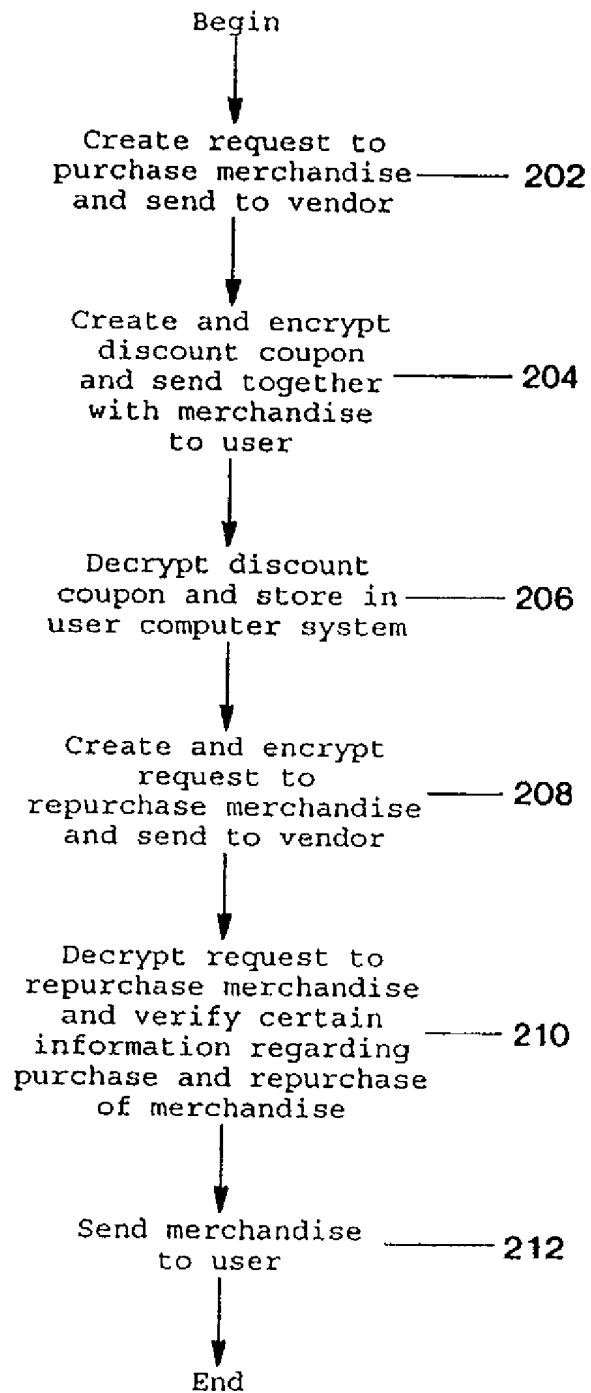
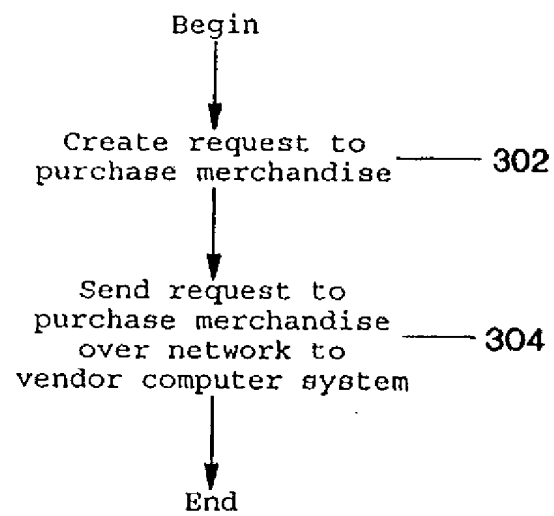


FIG. 2



**FIG. 3**

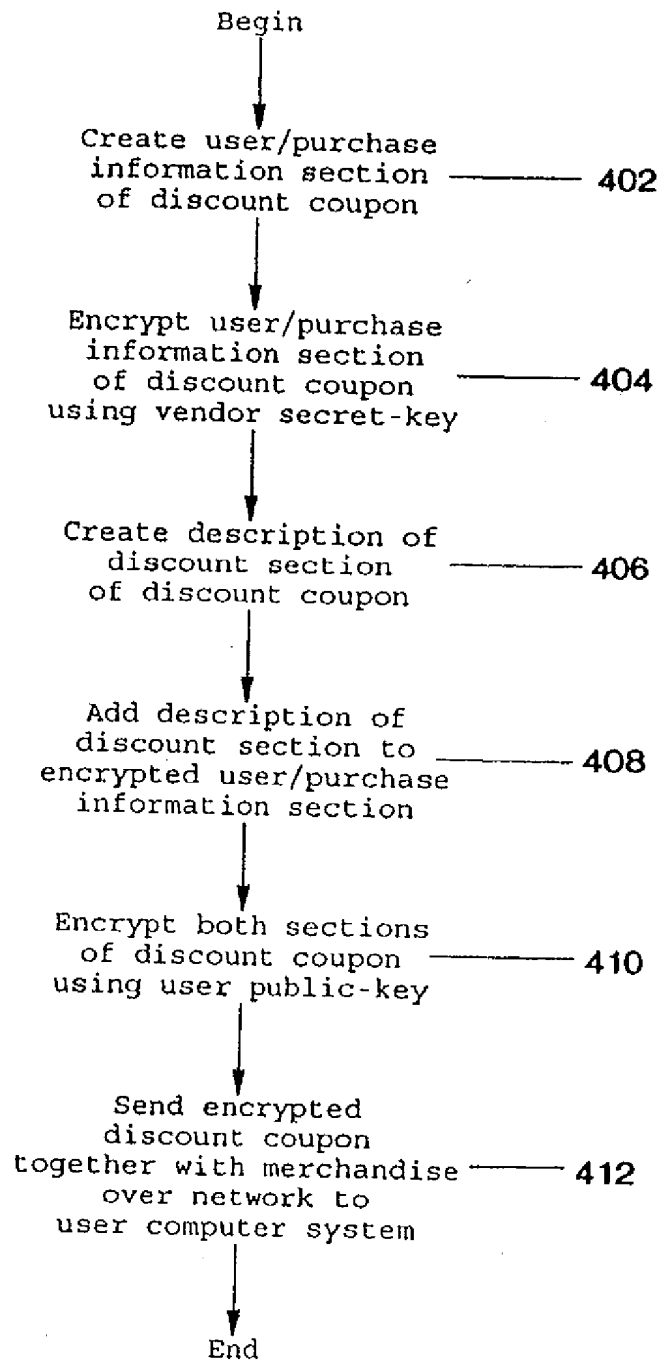


FIG. 4

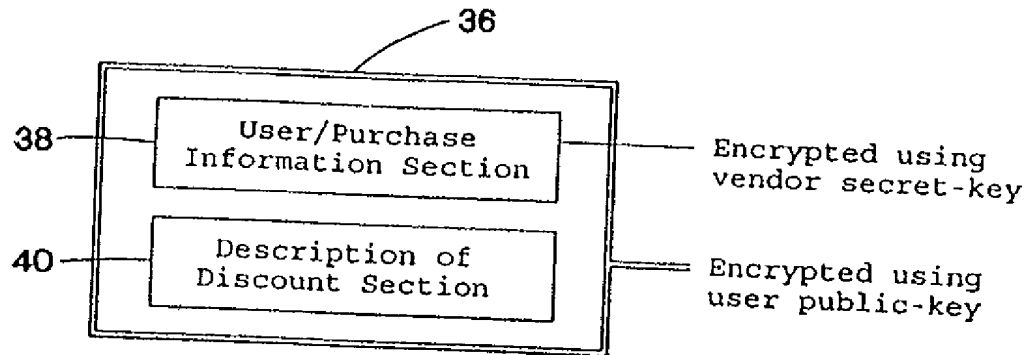


FIG. 5

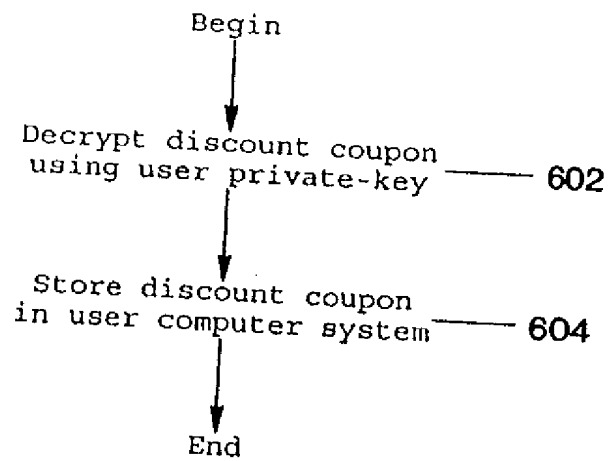


FIG. 6

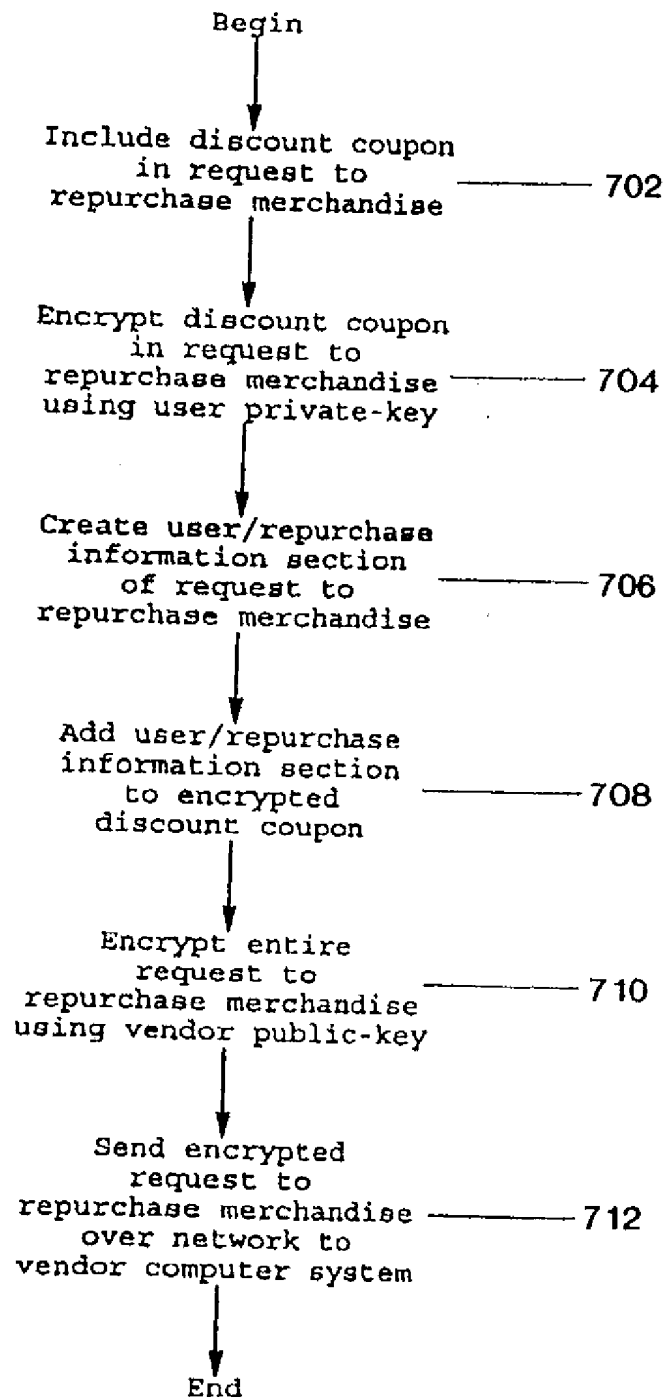


FIG. 7



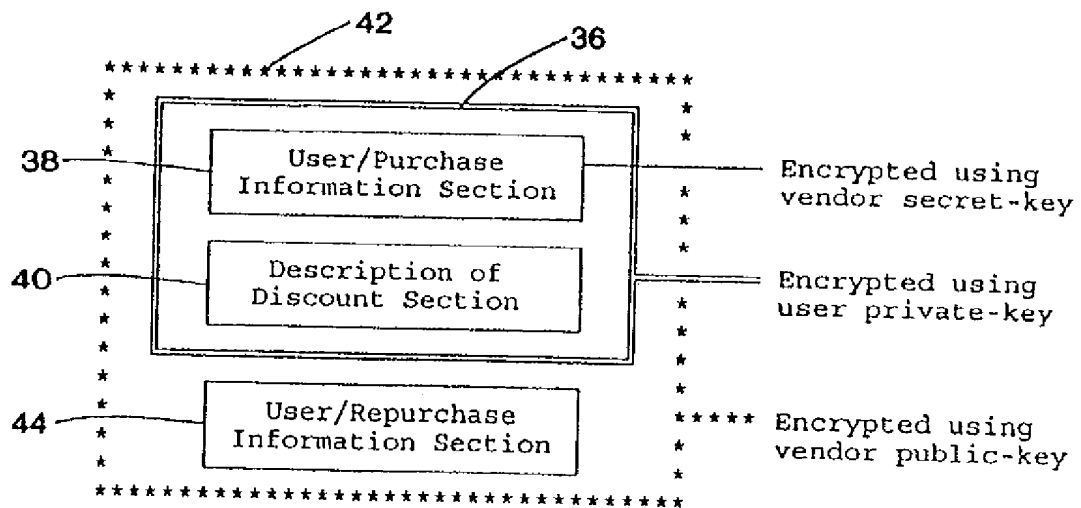


FIG. 8

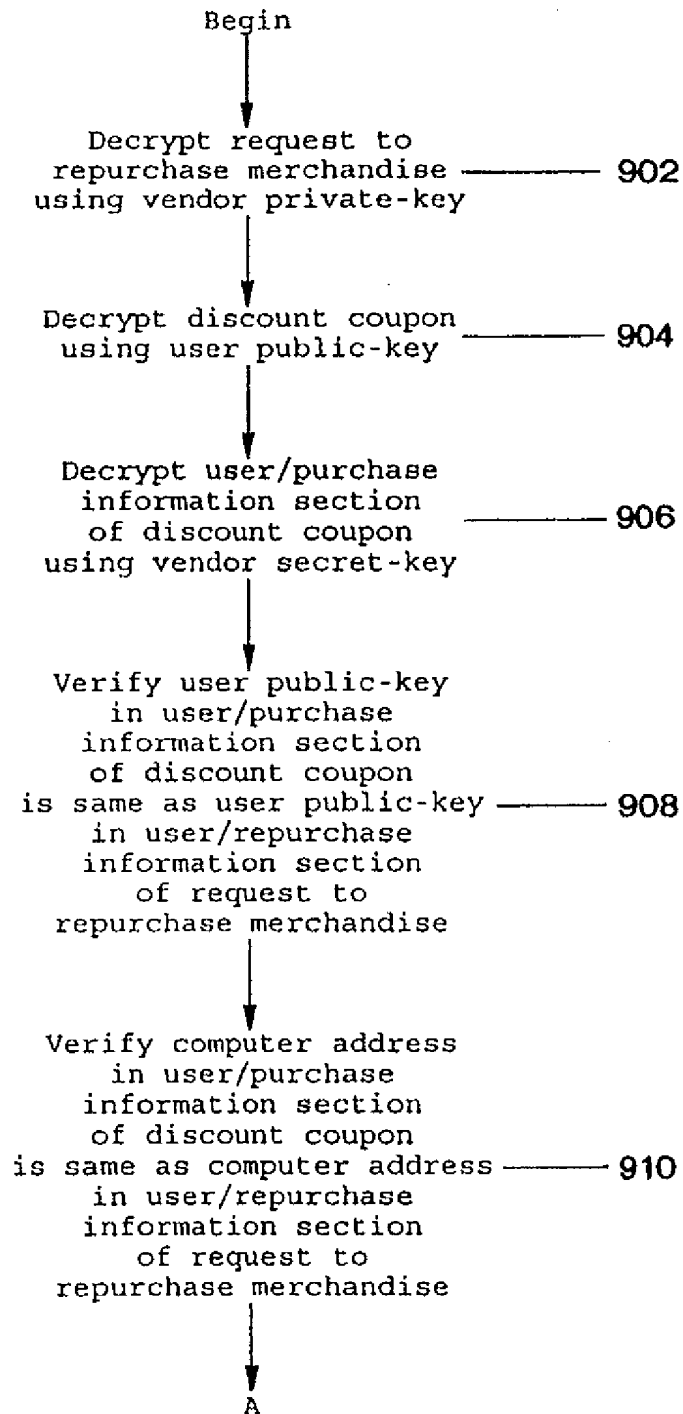


FIG. 9A

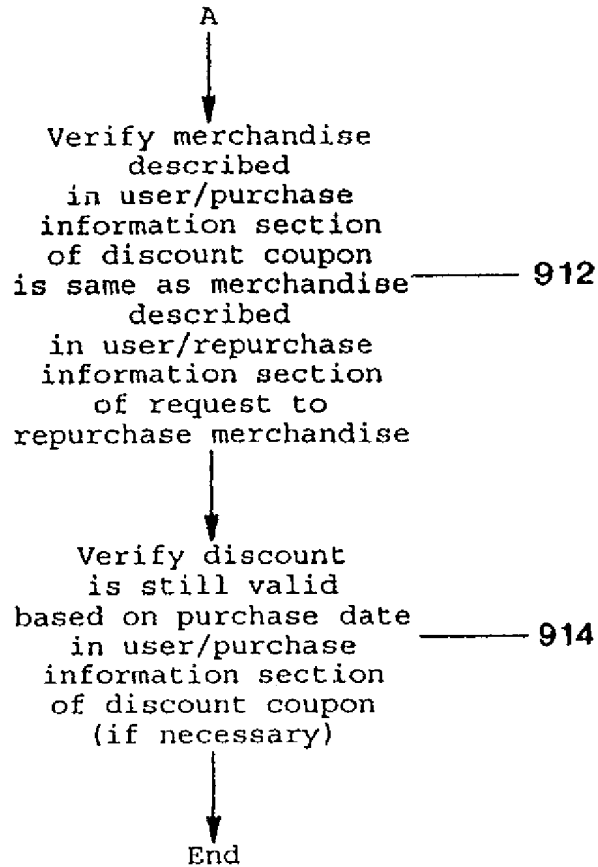


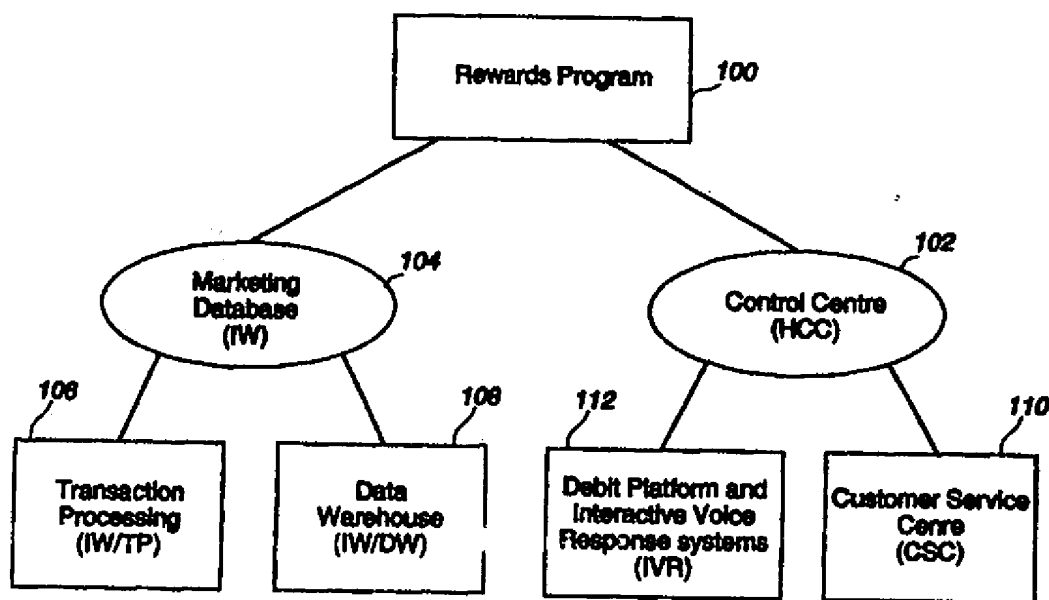
FIG. 9B



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: TELECOMMUNICATIONS REWARD METHOD



(57) Abstract

A telecommunications reward method provides telecommunications services rewards for purchases made by members. The reward method frequently updates the member's reward profiles so that rewards are virtually instantaneous. The rewards consist of telecommunications services, for example long-distance call minutes or cellular telephone air time, and are easily redeemed. Apparatus for implementing the method includes a high-level control centre and a database management system.

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CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovakia
CM	Cameroon	LR	Liberia	SN	Senegal
CN	China	LT	Lithuania	SZ	Swaziland
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	LV	Latvia	TG	Togo
DE	Germany	MC	Monaco	TJ	Tajikistan
DK	Denmark	MD	Republic of Moldova	TT	Trinidad and Tobago
EE	Estonia	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	UG	Uganda
FI	Finland	MN	Mongolia	US	United States of America
FR	France	MR	Mauritania	UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

## TELECOMMUNICATIONS REWARD METHOD

### Field Of The Invention

5       The present invention relates to telecommunications reward methods and is particularly concerned with the rewards based on consumer purchases.

### Background Of The Invention

10       The use of loyalty rewards programs to retain existing customers and to entice new ones to purchase or use a particular product has become persuasive amongst retailers from grocery chains to petroleum companies and also amongst credit card companies who provide a reward of some sort or another for using their card rather than a different credit card. One of the problems with these reward programs whether it is air miles for gasoline purchases or credits toward an automobile purchase for using a particular credit card, is that they do  
15       not provide something which has immediate value to the participant in the rewards program.

### Summary Of The Invention

      An object of the present invention is to provide an improved telecommunications reward method.

20       In accordance with an aspect of the present invention there is provided a method of providing telecommunications rewards to a member comprising the steps of generating a point-of-sale transaction, relating the point-of-sale transaction to a member of telecommunications awards, determining value of reward in dependence upon the point-of-sale transaction, updating a member's profile for the member by the  
25       value determined.

      Accordingly the method of the present invention combines known

technologies in such a way as to create a system whereby participants in a rewards program can be given telecommunications access time, e.g. long distance time, Internet access time or cellular telephone air time, in return for purchases and the reward would be credited and available for use immediately following the purchases.

The method relates a purchase to an immediate reward for telecommunications access time by identifying the purchase as eligible for a reward through a member database for example a UPC code scanner database or a credit card magnetic strip database which then communicates to a telecommunications debit platform which in turn is interfaced with a long distance or cellular provider.

Advantages of the present invention are as follows:

- Providing a link to purchases with instant gratification of telecommunications credits, for example in telephony long distance or cellular minutes and in data communications access time to services or the Internet.
- There is thus no need to save up or receive a statement prior to using the credit, a participant in the rewards program would be able to utilize the reward immediately following the purchase for which the reward was granted.

#### Brief Description Of Drawings

The present invention will be further understood from the following description with references to the drawings in which:

Figure 1 illustrates, in a flow chart, an overview of the reward method in accordance with an embodiment of the present invention for a magnetic strip card user;

Figure 2 illustrates, in a flow chart, an overview of the reward method, in accordance with an embodiment of the present invention an overview of the method for a UPC code card holder;

Figure 3 illustrates, in a flow chart, the reward method in

- 3 -

accordance with the embodiment of the present invention;

Figure 4 illustrates in a block diagram apparatus used by the method of Figure 3;

5 Figure 5 illustrates, in a flow chart, an overview processing data flow for the reward method of Fig. 3;

Figure 6 illustrates, in a block diagram, input activities of the method of Fig. 3;

Figure 7 illustrates, in a block diagram, reward transfers;

10 Figure 8 illustrates, in a flow chart, the file processing data flow for the reward method of Fig. 3;

Figure 9 illustrates, in a flow chart, member lead processing data flow for the reward method of Fig. 3;

Figure 10 illustrates, in a flow chart, member enrollment processing data flow for the reward method of Fig. 3;

15 Figure 11 illustrates, in a flow chart, the reward transaction process for the reward method of Fig. 3;

Figure 12 illustrates, in a flow chart, transaction processing data flow for the reward method of Fig. 3;

20 Figure 13 illustrates in a block diagram outbound activities for apparatus used by the method of Figure 3; and

Figure 14 illustrates, in a flow chart, statement processing data flow for the reward method of Fig. 3.

25 Referring to Figure 1 there is illustrated in a flow chart an overview of the method in accordance with an embodiment of the present invention.

At step 1, as represented by a card 10, a point-of-sale transaction is initiated.

30 Step 2, a member card is swiped through a magnetic strip reader, as represented by a block 12, as in a typical point-of-sale transaction.

Step 3, a credit card (or debit) card database is accessed, as



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represented by a block 14, to confirm the transaction. Thus far the method proceeds as is well known with point-of-sale transactions.

Step 4, a field in the card holder record, in the database 14, identifies the card holder as a member of the reward plan. Responsive to the presence of this identification a datalink is established, as represented by block 16, to an appropriate debit platform, steps 5a and 5b, as represented by blocks 18 and 20. For simplicity, only long distance 18 and cellular 20 debit platforms are illustrated. However, the actual debit platform used could be a telecommunications services platform. The telecommunications services platform could credit the member with long distance or cellular time or a host of other services, such as Internet access time, voice messaging, call waiting, and calling number identification. Individual member profiles could be used to distribute rewards between the various services or to other users. For example to a daughter away at University.

The rewards method is completed by step 6, by the member using the telecommunications reward, as represented by block 2.

Similarly Figure 2 illustrates an overview of the method for a member having a UPC type card at step 1, as represented by a UPC card 24.

At step 2, a member's card is held to a UPC code scanner, as represented by block 26, as is typical in a point-of-sale UPC transaction.

At step 3, a UPC code card database is accessed, as represented by a block 28 to confirm the transaction.

At step 4, a field in the current holder record in the database 28 identifies the cardholder as a member of the award plan. Responsive to the presence of this identification a data link is established as represented by block 16. The remaining steps in the method are the same as in Figure 1.

Referring to Figure 3 there is illustrated in a flow chart a reward method in accordance with another embodiment of the present

- 5 -

invention.

5       The method begins at step 1 with a point-of-sale transaction being collected, as represented by block 30. Step 2, transactions are aggregated and sorted as represented by block 32. An associated transaction file, as represented by block 34 is created by the first and second steps. At step 3, transactions are rated to determine number of seconds to be rewarded, as represented by a block 36. In order to accomplish this rating, a rewards rating table, as represented by block 38, is consulted. At step 4, any special treatment required for members is determined and rewards are calculated. Special treatment is determined by consulting a member profile, as represented by block 42, and a rewards file is created as a result of step 4, as represented by block 44. At step 5, the member's profile is examined and rewards are updated on the member file, as represented by block 46. The updated member profile is represented by a block 48. At step 6, a master update process is performed on a debit platform as represented by block 50. A debit system member profile is updated as represented by block 52. The method is completed at step 7, when a member phones into the system and consumes rewarded time as represented by a block 54.

20       Referring to Fig. 4, there is illustrated a reward system 100 comprising a high-level control centre (HCC) 102 and an information works (IW) 104. The IW 104 includes a transaction processor (IW/TP) 106 for partner management, member management, and reward system calculations and an data warehouse (IW/DW) 108. The HCC 102 includes a Customer Service Centre (CSC) system 110 and a debit platform with interactive voice response (IVR) 112.

The method is a database-driven relationship marketing program, there are four distinct business components.

30       Transaction Processing (IW/TP) Database Management System 106; Data Warehouse (IW/DW) Database Management System 108; High-level Control Centre for Debit Platform 102; and IVR systems (IVR)

112.

Now to address the system functionality as well as describe the inter-relationship of the Customer Service Centre, Debit Platform and IVR components with InfoWorks' components: Transaction Processing and Data Warehouse Database Management Systems.

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Referring to Figure 5, there is illustrated, in a flow chart, an overview processing data flow for the reward method of Fig. 3. Advantages of the present system are:

I.

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- \* Immediate gratification with "real-time" reward accumulation and redemption.

- \* Conceptually unique, technology-based coalition loyalty program.

- \* High appeal, easily attainable reward currency.

- \* Preemptive opportunity to link land-based long distance with cellular mobility.

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- \* Debit Platform offers enhanced customer telecommunications services.

- \* Opportunity for value-added credit card overlay with innovative functional enhancements.

- \* Commitment to data driven Customer Value Enhancement strategies for partners.

20

- \* Network time, Debit Platform, and marketing databases supported by blue chip providers.

- \* Longer term opportunity exists for Members and Partners to ride the information highway into direct-to-home entertainment/information services

- \* Global expansion opportunities with significant ROI.

## Overview of Reward Process

### **\*Members in the program earn their points**

automatically through electronic Point of Sale (POS) tracking when they shop at participating Partner.

- 5       The IW/TP System collects and processes the Member purchase transactions and assigns the appropriate reward points.

- 10       The reward redemption process includes calling the IVR system via a 1-800 telephone number, 24 hours a day, 7 days a week: Members will call a 1-800 number, Enter their unique Member Number and password, Place a call with a telephone number of their choice

The HCC/Debit Platform is the data manager of the redemption process and is the vehicle that Members use to redeem their reward points.

- 15       HCC/IVR platform is a voice-assisted telephony system. The IVR system is a vehicle for: Customer Service, Program Information, Member Enrollment, Customized advertising, Branded messaging, Branded marketing surveys.

For service, Members may access a live operator at the CSC (Customer Service Centre).

### **Database Management Systems**

- 20       Data Warehouse and Transaction Processing Database Management Systems allow for an extremely flexible environment supporting several basic, but different business functions. Together, they support:

- 8 -

- Integration with a first class customer service system
  - High volume transaction processing
  - Detailed management reporting and EIS systems
  - Partner reporting
- 5
- Basic analytics and the IW Customer Value Scorecard™
  - Marketing information retrieval and advanced analytics

#### Objectives of the Database Management Systems

- 10
- Design and support a system that is driven by the anticipated marketing information requirements, with the flexibility to adapt to changing market dynamics.
  - Ensure seamless connectivity between the Database Systems, Customer Service Centre, Debit Platform, IVR and external
- 15
- suppliers and vendors.
  - Ensure data integrity by developing appropriate edits, controls, audits and procedures.
  - Meet the growth requirements of the program in terms of membership, partnership, and more detailed transactional data,
- 20
- i.e. product categories or SKU.
  - Ensure the system architecture has the necessary through-put and offers flexibility, scalability and portability to manipulate and report information in the database.
  - Continuously enrich the Member Profile information through
- 25
- survey data, file overlays and tracking of response data.

- Deliver dynamic analytic services to support Customer Value Enhancement (CVE) marketing strategies.

The development of the functional design, system specifications, programming, simulation, training and implementation of the system will take place as two deliverables.

5

#### IW/TP System Architecture-Pipeline and parallel processing

The architecture of the IW/TP engine will include many asynchronous processes to handle different stages of transaction processing. The processes will be similar for each transaction type; they will be kept simple; and they will support pipeline and parallel processing. This architecture allows many processes to be reused for different transaction types. Communication processes can be common to many transaction types and for many parties. Separate processes to handle the communication links, to load transaction files into the database; and to process the transactions within the database will simplify the maintenance of the programs. Simple changes to file formats and support for new communication methods could be implemented without touching the transaction processing processes. The migration from a batch engine to a real-time engine could be done quickly by providing a new loader process on top of the existing processing processes.

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#### Inbound Processes

The processes (or software modules) for an Inbound transaction will be:

- \* File reception (from communication line or media),
- \* Basic file validation (number of trans.; transaction formats),
- \* File segmentation (broken into "work" units),
- \* Segment loading (in a work area),
- \* Segment validation and computations (still in a work area).
  - Detect and log validation errors
  - Compute any necessary quantity (Rewards, Offers)
- \* Segment insertion (into final database)

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Referring to Figure 5, there is illustrated, in a flow chart, processing data

- 10 -

flow for the system. And in Figure 6, there is illustrated, in a block diagram, input activities of the system.

### Outbound processes

The processes (or software modules) for an outbound transaction will be:

- 5       \* Create outbound transactions (select a set for transmission).
- \* Create outbound file (for outbound transactions)
- \* File transmission (to communication line or media)

### Transaction Types and Input Activities

- \* Member Lead (prospect data)
- 10       \* Member Enrollment (basic Member data)
- \* Member Profile changes (demographics)
- \* Member Purchases (POS transactions sent by Partners to IW/TP)
- \* Reward Credits (Member Base Offer and Special Offer points)
- 15       \* Reward Debits (Debit Platform redemption of points and call detail data)
- \* Reward transfers
- \* Member IVR Message control (what messages to play)
- 20       \* Member IVR Response (responses to branded messages and surveys)
- \* Customer Service Messages (problems and resolutions about Members)
- \* Fulfillment Request message (control for Member fulfillment)
- 25

- 11 -

- \* Mail-Out Message Flags (Fulfillment)
- \* Database Synchronization (shared table additions/updates)
- \* Transaction Acknowledgment (processing audit control).

#### Member Lead (ML)

A prospect may enroll into the reward system program using one of the various methods that are available:

- Customer Service Centre
- IVR
- Mail-in order form via Data Entry
- Internet \*
- Electronic Kiosk \*
- Partner "auto-enrollment" information
- Partner "auto-prospect" information

Regardless of which enrollment method is chosen, a new Member Lead transaction is generated and sent to IW/TP.

The transaction layout is the same as the Member Enrollment (ME), except the transaction identifier is "ML" and the Member Number must be blank. A unique reference number is assigned to the transactions and stored in the MEMBER\_LEAD table. CSC is responsible for returning a clean Member Enrollment (ME) transaction with the assigned reference number. This reference number will be used to update the MEMBER\_LEAD table as accepted or rejected. If the lead is rejected, a reason code will be provided by CSC.



**Member Enrollment (ME)**

All Member Enrollment transactions will be stored for auditing purposes. The CSC is responsible for validating all information on prospective Members.

The new Member information may be generated via the IVR system, or

5 Member Lead transactions sent from IW/TP. Once an individual's request for enrollment has passed validation, CSC will:

1. Assign a unique Member Number
2. Activate the Member Number on the Debit Platform
- 10 3. Send a Member Enrollment (ME) transaction to IW/TP.
4. If the new Member Lead was provided by IW/TP, then the reference number must also be included on the ME transaction.
- 15 5. If a new Member Lead is rejected by the CSC, a reason code will be sent to IW/TP for updating of the MEMBER\_LEAD table.

**Member Profile changes and updates**

Member Enrollment is divided into two categories:

- 20 1. Basic profile which includes name, addresses, phone numbers, etc.
2. Demographic profile which includes answers to various survey questions

- 13 -

**a) Base**

5 If any profile information changes on a given Member, all information (fields) will be transmitted from CSC to IW/TP using the Member Enrollment transaction. The following transaction type code will be used to control the update process.

⇒ N - new Member enrolled

⇒ U - update current Members profile

**a) Demographic**

10 For demographic profile updates, CSC will only transmit the information that has changed. A Member Enrollment type ME02 transaction will be used to provide this demographic information.

**Member Purchase (MP)**

15 When a Member purchases various items at a Partner's location and presents their reward system Membership card, the Partner is responsible for transmitting the purchase transaction to IW/TP using one of the certified transmission methods. This purchase transaction is translated into reward points and the Member's balance is updated. Each purchase transaction will generate a Reward Credit transaction. Multiple Reward Credit transactions  
20 will be sorted and grouped into blocks for transmission to HCC.

**Reward Credit (RC)**

A Reward is a reward system quantity of points purchased by a Partner or FTC for a Member. This Reward Credit transaction contains a description of a Member's purchase, date/time, Partner, location, transaction purchase

- 14 -

amount and the Reward points. This transaction is typically sent by IW/TP to HCC and serves two functions:

1. CSC will receive Reward transaction details to assist them with Member inquiries.
2. Debit Platform is given the Reward Credits to increase a Member's point balance for potential redemption via long distance or cellular phone calls.

All reward credit transactions should have an offer code or other field to identify the source.

#### 10 Reward Debit (RD)

Each time a Member calls into the Debit Platform and makes an outbound call, a Reward Debit transaction is generated. This redemption transaction will record:

- caller's start time
- caller's end time
- destination number (or description, i.e. movie title)
- total reward consumed and subtracted from the Debit Platform
- redemption currency code (i.e. cellular, long distance, video)
- Call detail information

HCC will transmit all Reward Debit transactions to IW/TP. IW/TP will update the Member's monthly redemption accumulators, store and archive the transaction for analytical reporting and statementing.

The Reward Debit transaction is defined so that other

- 15 -

redemption currencies are possible.

#### **Reward Transfer**

Any Member can transfer rewards from themselves to another Member. This transfer may be initiated by a Member within the IVR system. A transfer is simply a **Reward Debit** transaction for the initiating Member and a **Reward Credit** transaction for the receiving Member. Each transaction will be identified with both Member Numbers and the same reference number. If CSC representatives are allowed to transfer rewards on behalf of a Member, then security must be in place to ensure rewards are not transferred to common Member numbers (themselves, friends, etc.).

Referring to Figure 7 there is illustrated, in a block diagram, reward transfers.

#### **Member IVR Message flags (IM)**

This transaction controls the branded message switches for the IVR system. These flags instruct the IVR system to play specific targeted advertisement messages for individual Members. This transaction can be generated by an analytical process according to some business rules via the IW/DW system. The transaction will update the Member's message profile and is passed on to the Debit Platform for IVR processing.

Each message will have an effective date and expiry date. The IVR system is responsible for deactivating the message once it is played and returning an IVR Response transaction.

#### **IVR Response (IR)**

Whenever a Member calls into the IVR system and is prompted for various messages and/or surveys, an IVR response transaction will be sent to IW/TP for future analysis. Which message/survey generates these transaction will be the responsibility of reward system and HCC. The data stored would indicate how long they listened to a specific message (i.e. % completed, zero-out,

- 16 -

hung-up), as well as the response codes from survey questions.

#### CSC Message (CM)

5 All calls made to the CSC by a Member will be recorded. The problems, complaints, messages, and resolutions are categorized then sent to IW/TP for insertion into the IW/DW database for future analysis.

#### Mail-Out Message Flags (MF)

10 Controls the Mail-Out messaging flags. These flags will instruct the statement processing fulfillment house which messages, flyers, advertisement should be included with the statement. These transactions are generated by IW. reward system Account Managers are part of the process of defining requirements.

15 Database Synchronization (DS) Most database tables in the IW/TP system are updated via transactions. However, not all tables require a specific transaction type like Member Enrollment (ME) or Member Reward (MR). The Database Synchronization (DS) transaction is the "catch-all" transaction for all other database synchronization transactions.

#### Transaction Processing Acknowledgments (TA)

20 Processing acknowledgments transactions are generated by remote sites on transactions sent by IW/TP to them. This mandatory information allows IW/TP to track the transactions it generates. It ensures that a remote site actually received and processed the transaction file sent by IW/TP.

Acknowledgments will be processed by IW/TP the same way as any other inbound transaction. This will also greatly simplify the synchronization of different systems.

#### Control Processing

Referring to Figure 8 there is illustrated, in a flow chart, the file processing data flow for the reward method of Fig. 3.

### File Reception

5 All files are transmitted via predetermined telecommunication interfaces. Each party will be assigned an unique USERID which will allow them to transmit files in to their own directory. Transmitted files are automatically located and recorded in the IN\_FILE\_CONTROL table with a unique file control number as "RECEIVED". The files header information and date/time of reception is also recorded. The file will then be moved to a designated processing area for validation.

### High Level Validation

10 The IN\_FILE\_CONTROL table will be automatically scanned at regular intervals for "RECEIVED" files. The file header is checked for validity:

- Transaction type using the system edit table
- 15 • Loyalty Program using the system edit table
- Partner ID using the Partner table
- Service centre using the system edit table
- File sequence number to ensure this file has not already been transmitted using the
- 20 IN\_FILE\_CONTROL table.
- Date and time

Each detail record is validated to ensure all number fields are numeric and selected control fields are accumulated. All control fields are checked against the trailer record. If any errors are found an error log and report will be generated. These errors will be communicated to the sending party according to a pre-defined procedure for that specific party. A successful validation will update the file status to "VALID"

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**Disaster Recovery Copy of input files**

All files that will be scheduled for processing will be copied and sent to the off-site backup server. The backup server will hold a copy of all files received and transmitted to connecting parties. These files will be used for recovery purposes in case of disaster or system failures. The backup server must have the capability to store a minimum of all files received and transmitted since the last full off-site system backup. Upon successful transmission, the IN\_FILE\_CONTROL disaster recovery field is updated to "SENT".

**10 File Segmentation**

File segmentation is the processing of breaking up files to be processed into smaller work units. These work units can be processed using parallel processing. This means multiple units of work can be process simultaneously. The IN\_FILE\_CONTROL table is scanned for files with a status of "VALID". The selected file is then segmented into smaller work files. The size of a segment will depend on the transaction type and is controlled using the system EDIT\_TABLE. Each segment is assigned a number and each transaction will be assigned a unique tracking ID. Once a segment is completed, the segment name, transaction type, and size is added to the SEGMENT\_CONTROL table with the status "LOADED".

**Segment Validation and Preprocess**

This process will scan the SEGMENT\_CONTROL table for "LOADED" segments. Each time a loaded segment is encountered the status is changed to "PREPROCESS". The preprocessing of each transaction will consist of validating member codes, location codes, message codes, etc. All preprocessing functions that require table lookups, calculating of rewards are performed and the results stored with the transactions. All transactions that have error conditions or marked for suspend are marked with an appropriate error message code and stored in the ERROR\_CONTROL table.

When processing segment has been completed the segment status is changed to "PROCESSED".

#### Audit and Control

5 Up to this point the only production database tables being updated are the IN\_FILE\_CONTROL and SEGMENT\_CONTROL tables. All other tables are work areas. If a system failure occurs any time after file reception, no production data recovery is required. As part of the system startup procedures:

- All work areas will be deleted
- 10 • All SEGMENT\_CONTROL entries will be deleted that have not been "COMMITTED".

Segment Process and CommitEach segment marked "PROCESSED" is located and any additional processing (if required) is completed. Additional processing will be required only if the result of the processing is dependent on the current status of a Member. An example would be if a Member's status level changes based on the accumulated rewards for a given Partner. The result changes the calculation of the reward on the next transaction for the same Member. All transactions are inserted into the production database and all updates are applied to the production databases. At the end of a segment 15 all updates are committed to the database and the SEGMENT\_CONTROL entry is changed to "COMMITTED". Once all the segments for a given input file have been committed then the IN\_FILE\_CONTROL entry is changed to "COMMITTED" along with the date and time, total number of transactions processed, and the total number of errors.

#### 25 Audit and Controls

All segments that require the updating of the same database tables will be updated asynchronously, i.e. there will be no parallel processing of segments



- 20 -

that update the same tables.

Extract outbound transactions

Outbound extracts will be controlled by the SCHEDULE\_CONTROL table.

This table will control the frequency, destination and size of all outbound

5 files. When a specific extract process is started, the system will:

1. Creates the file.

2. Extract all the un-flagged transaction records from a selected table

3. Create the required header record

10 4. Format the detail records

5. Create the required trailer record

6. Closes the file

7. Mark as "flagged" the un-flagged transaction records from step 2

15 8. Each extract file is assigned a unique name and an entry is added to the OUT\_FILE\_CONTROL table with the status set to "EXTRACTED".

Transmitting File

20 This process will scan the OUT\_FILE\_CONTROL table for all entries with a status of "EXTRACTED". For each entry found, a telecommunication connection is initiated to the designated party and the file is transmitted.

Disaster Recovery Copy of output files

A copy of the output file is also transmitted to the off-site backup server.

25 Upon successful transmission, the OUT\_FILE\_CONTROL disaster recovery entry is updated to "SENT".

Transaction Acknowledgment

All transactions sent to a remote data centre for processing will require an acknowledgment that the transactions were successfully processed or failed. These acknowledgments will be returned in a standard format that conforms to the same header, trailer standards as other file formats. By using this format the acknowledgment files can be processed using the same standard dataflow as mentioned above.

#### Purpose of off-site Disaster Recovery Server (DRS)

Copy of all files received by IW/TP and Copy of all files transmitted by IW/TP. System back-ups will be performed weekly (frequency may change) and stored off-site. If a disaster occurs prior to the next scheduled IW/TP system back-up, the previous system back-up is retrieved from off-site storage. In addition, all the required input and output files are retrieved from the off-site Disaster Recovery Server. These input files will be re-processed using the last system backup. However, it is possible that the new rewards generated may not match the ones originally sent to HCC. These output files should not be transmitted to HCC until the new output files are validated. This requires a comparison of the new output files with the DRS copies of the originally transmitted output files. For each transaction that does not match, an error message and possibly an adjustment transaction should be generated.

#### Member Module

This is the main module of the system and it contains pertinent information about the Member, i.e. Member Number, name, address, language preference, etc. This module supplies information to many other supporting modules.

### Member Enrollment Management

A Partner's customer can become a reward system Member and added to the IW Transaction Processing database as follows:

- 5
1. Auto-Prospects - A Partner can supply a "target group" of valued customers which can be uploaded to the database as leads( prospects) via tape or electronic transfer.

*Note: They are not automatically enrolled.*

- 10
2. Other methods:
    - Enrollment forms sent by fax, e-mail, take-ones, or mail.
    - Enrollment data collected via a telephone call to Customer Service Centre
    - Enrollment data collected via the IVR systemValidation of Member data

15

Data for potential new Members can enter the system from a variety of sources, but in each case, HCC is responsible for validating all new Member data.

20

If IW/TP receives information from Data Entry or from Partners, IW/TP simply passes on this raw Member Lead transaction to HCC for validation.

Referring to Figure 9 there is illustrated, in a flow chart, member lead processing data flow for the reward method of Fig. 3.

- 23 -

Referring to Figure 10 there is illustrated, in a flow chart, member enrollment processing data flow for the reward method of Fig. 3.

#### Rewards Module

- 5 Partners Rewards- Partners are responsible for capturing the reward system data and sending it to FTC. Members (using the reward system card) will earn points for each dollar spent at a Partner's location. Members will have options on "what" currency types they wish to use when redeeming their points, i.e. Long Distance minutes, Cellular minutes, etc.

#### Data Capture

- 10 There are several methods in which a reward system transaction can be captured and sent to the Partner Host. The methods are as follows:
- \* POS Direct - data is captured via card swipe at the Partner POS.
  - \* F.I Terminal - data is captured on a Financial Institution Terminal (Credit/Debit).
  - 15 \* reward system Terminal - data is captured on a standalone reward system terminal.
  - \* Record of Charge - data is captured on chits/paper.
  - \* PC Direct - data is entered and captured on a PC.

#### Reward Credit Transaction Process

- 20 Once the transaction is received at the Partner Host, the following process is executed:
- The Partner then generates a Member Purchase (MP) transaction and sends it to the IW/TP. Procedures and Standards for Data Capture will be provided by FTC to the Partner.
- 25 IW/TP receives and validates the MP transaction by Member Number, Partner ID, Partner's store location, offer codes. Any errors are flagged and reported to the Partner.

- 24 -

Reward points are likely to be pre-calculated by the Partner. However, IW/TP must verify the points in any case. Using the Offer rate table, the reward points are calculated.

5 The reward points are analyzed for fraud by comparing the points to pre-defined Partner thresholds. Any suspected transactions are flagged as "suspense" and FTC is notified for manual verification.

IW/TP generates a Member Reward Credit (RC) transactions. IW/TP will also manage Member and Partner point accumulator buckets.

10 The RC transactions are transmitted to HCC. The RC transactions are stored HCC receives the RC transactions and updates the available points for the Member on the Debit Platform

The CSC will receive the Reward Credit Transactions via HCC from IW.

#### Reward Transaction Triggers

15 All of these triggers represent a Reward Credit transaction type. Each has its own set of business rules:

Members purchase at a Partner's store

Purchase of a specific item (bonus offer)Purchase of a specific offer of double or triple the BASE

Accumulation of points over a pre-defined time period

20 Transfer from one Member Number to another Member Number (account)

Discretionary award from Customer Service Representative

IVR rewards for completing surveys

Promotional reward of units

#### Reward Redemption

25 HCC is responsible for managing the Debit Process. This debit process, commonly known as redemption is initiated when a Member consumes or uses a part of their reward points. IW manages the Member purchases to reward "points" conversion process. HCC manages the reward point to "currency" conversion process based on the method of redemption, i.e. Long distance, 30 cellular, video, Internet.

### Reward Debit Transaction Process

When the Member redeems his/her points, HCC debits their point balance based on the type of currency used to redeem the points, i.e. 1 cellular minute = 2000 points. A Reward Debit transaction is generated and transmitted to  
5 IW/TP to keep the systems synchronized.

### Reward Credit Processing

Rules and standards apply for Credit processing. The rules and standards must be authorized by reward system and will vary depending upon the Partner. IW and the CSC can generate credits for a Member (upon  
10 investigation). If IW initiates the credit, a Member Reward Credit transaction is created and transmitted to HCC. If the CSC initiates the credit, a Member Reward Credit transaction is created and transmitted to IW. The Member's account will be credited instantly, allowing immediate redemption. Referring to Figure 11 there is illustrated, in a flow chart, the reward  
15 transaction process for the reward method of Fig. 3. Referring to Figure 12 illustrates, in a flow chart, transaction processing data flow for the reward method of Fig. 3.

### DATA WAREHOUSE

Analytical Processing will render the mass of Transaction, IVR and Customer  
20 Service data intelligible and actionable to these reward system stakeholders:

- Partner Marketing Team
- reward system Account Managers
- reward system Program Management
- InfoWorks System Administrator

25 On-Line Analytical Processing (OLAP) is a system for storing, analyzing, reporting and viewing information about the activity of reward system

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Members. OLAP is distinguished from the TP (Transaction Processor) in these ways:

Storage- Transactions are stored for years, not for only 3 months;

Database- Tables are optimized for fast, flexible data access;

**5 Processing- Specialized functions for marketing analytics**

The OLAP System has these major components: IW Data Warehouse (DW) for storage and de-normalized tables for accumulating Member transaction data (detail level data), archiving system for low-cost storage and rapid retrieval of old detail data.

**10 IW Analytical Processing (AP) for marketing-statistical software procedures for reporting and segmenting.**

Partner Report Repository for file storage and access method for historical reports.

**15 Partner Marketing Databases (MDB) subsets of data warehouse designed for marketer access at Partner level.**

Graphical User Interface (GUI) to provide 'slice & dice' views of the MDB for the FT Account Manager and to provide OLAP system control for the InfoWorks System Administrator.

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Processing Flow includes the steps of:

Validate Input, Running Totals, Upload Format, TP Unit, Procedures.

#### Data Warehouse

##### Data Collection from IW/TP

- 5 The TP will act as a central point of data collection for these reward system data sources:

Member transactions from the Partners : Partner transmissions

Reward accounting by the TP : IW TP Center

Debit Platform and IVR activity : HCSC activity

- 10 High-level Control Center

Data Entry

##### Transferring Data from Data Warehouse to IW/TP

After download to the Data Warehouse, some analytical procedures will generate Member data values which may be of use in these TP functional areas:

15

Member Reward Status input variable in logic for bonus rate calculation based on Member segment status i.e. Gold, Silver, Bronze

Members IVR custom messaging flow through to IVR

Mail-out messaging flow thru to statement fulfillment house

- 20 The Analytical Member data will be processed as a special transaction sent to the TP on a WEEKLY basis, taking place after that week's download has been analyzed.

The InfoWorks' Data Warehouse (IW/DW) stores reward system data to support the reporting, viewing and analytics functions. The DW has three sub-components:

25

- Physical Storage Units (ex: DASD drives)
- Database System (ex: Sybase)



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- Database Server (ex: Sun 1000)\*
- Archive System (tape or optical jukebox)

Referring to Figure 13 there is illustrated in a block diagram outbound activities for apparatus used by the method of Figure 3

5 Referring to Figure 14 there is illustrated, in a flow chart, statement processing data flow for the reward method of Fig. 3.

#### Debit Card Platform

The reward system PCS system comprises a front end voice application that has its own unique call flow as well as a back end database component  
10 that will suit the data requirements of the reward system.

The Control Centre 102 is the interface to the debit platform 112. It has access to tables in the reward system PCS database and is able to perform reward system and batch updates. The reward system PCS system requires access to the HCC 102 tables in order to provide some of the features  
15 required by the reward system.

The main functions and features required for the reward system PCS debit platform 112 are described in the following pages.

The reward system PCS has its own separate master database.

The tables that are the main concern are the CARD\_NUMBER,  
20 CONSUMER\_CALL\_LOG, and CONS\_OUTBOUND\_LOG tables.

It is also more efficient to keep the reward system call detail records separate because large call volumes are expected and reward system will be using the call detail records for queries by the Customer Service Centre and for its own analytics. Call detail records are currently stored in the PCS node  
25 databases but will need to be written to the central master database so that

- 29 -

they are accessible to the reward system from one centralized location.

5       The reward system member will choose their preferred IVR language during enrollment. This choice will be validated against the choices available on the IVR and will be stored in a language field on the reward system PCS CARD\_NUMBER table and in an IVR language field on their member profile. A member's household language is also recorded on their member profile so that analytics can be performed to determine the best options for future languages in the IVR.

10       At launch, English and French are the two languages that need to be available on the debit platform. More language options will be required as the campaign progresses and will be incorporated by simply recording all voice prompts in the new language and making a minor system change to the reward system front end voice application to recognize and act on the new language code.

15       When a member calls into the PCS system, they will be played a "welcome" message and a "request for member number" message in all IVR languages. Experienced members will know to immediately key in their member number rather than listen to the entire voice prompts. Once the member has entered their member number the call will proceed in their  
20       chosen IVR language. All voice within the call flow will be played in the member's language including branded messages and surveys.

25       In an alternative of the reward system PCS, a function will be available within the IVR to allow the caller to change their language choice (this will be particularly useful as new languages are added to the IVR). This "change language" function will be a sub-option under the administrative options on the main menu. If a member chooses to change their language in the IVR their current call must continue in the new language and the change must be immediately reflected on the reward system PCS CARD\_NUMBER table. Also, a member transaction to the CC must be created to update their member

- 30 -

profile. Until this function is implemented, the member can change their IVR language through the Customer Service Centre.

Each reward system member number (card number in PCS) will have a password associated with it. This password will be chosen by the member when they first use the debit platform. It is personal to the member and will not be visible to anyone.

A flag may be added to the CAMPAIGN table to indicate whether a campaign uses passwords. As well, a field has been added to the CARD\_NUMBER table to store the password for the card. The password length is currently set at 4 characters. A change will be made to increase the length of the password field to 10 characters and allow the IVR to accept a variable length password (minimum 4 to maximum 10 characters). A password reset flag will also be added to the CARD\_NUMBER table so that the member can be prompted to choose a new password on their next call.

When the member is initially setup in the PCS system their password will be blank and the password reset flag will be set to Y to indicate that a password needs to be chosen. When the member first calls into the IVR they will be prompted to initialize their password. The member must enter a password which is then validated (4 to 10 characters). The member is then asked to re-enter their password for verification. If the two passwords are identical, the member's password is set otherwise they must begin the entire routine again. On subsequent calls, the member will be asked to enter their password immediately after entering their member number (the member number is validated first).

A function will be available within the IVR system to allow the caller to change their password. This will be a sub-option under the administrative options on the main menu. If a member forgets their password, a procedure will be in place that will allow a Customer Service Centre agent to reset it (this will be an audited process).

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During the call flow, the member will be presented with a main menu of IVR options. The entire menu will be soft prompted such that the caller can make their selection at anytime while the menu is played.

The primary categories on this main menu will be:

- 5           ⇒ To listen to messages, participate in surveys, and earn reward system units, press 1
- ⇒ To place a call, press 2
- ⇒ For administrative options, press 3
- ⇒ For program and/or partner information, press 4
- 10           ⇒ To speak with a reward system customer service centre agent, press 0

Additional menu options can be added as required with the recommendation that the zero out to the CSC option always be played last.

- 15           A sub-menu will exist under the messages/surveys option and will be presented to the caller when they press 1. The primary categories on this menu will be:

- ⇒ To listen to messages from reward system Partners, press 1
- ⇒ To participate in surveys or games, press 2
- ⇒ To return to the main menu, press \*
- 20           ⇒ To speak with a reward system customer service centre agent, press 0

The place a call option will lead the caller through entering the telephone number for their outbound call.

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A sub-menu will exist under the administrative option and will be presented to the caller when they press 3. The primary categories on this menu will be:

- ⇒ To change your password, press 1
- 5       ⇒ To query your account balance, press 2
- ⇒ To transfer units to another member, press 3
- ⇒ To change your language choice, press 4
- ⇒ To return to the main menu, press \*
- ⇒ To speak with a reward system customer service centre agent, press
- 10       0

A sub-menu may also exist for the program and/or partner information option but will be designed as needed. This may include topics such as "to hear a list of reward system Partners", "to learn more about the reward system program", etc.

- 15       The caller will be guided within the call flow to enter the digits for their outbound call if they have enough units in their account for a one minute call at the lowest rating level (eg. local call). The caller will be able to place a national or international call provided that they have at least enough units remaining in their account (after rating) for a one minute call.

- 20       Outbound calls to regions within the North American Dialing Plan will be rated based on their npa and nxx in conjunction with the npa and nxx of the caller. International calls will be rated on the country code that was entered.

- 25       With only 1 minute remaining in the call, the caller will be prompted with a warning message which states that there is only 1 minute remaining for

- the call. A second warning, with only 10 seconds left, will also play. After their time has been used, the caller will hear a "Your time is up" message and will be disconnected from their outbound call. The caller may also disconnect from their outbound call by pressing the # key. The caller's account will be immediately updated to reflect the time used. The duration of the call will be rounded up to the next minute and this time amount will be translated to units based on the rating scheme for the call. After placing a call (either successfully or unsuccessfully), the caller will hear their new balance and will be presented with the main menu.
- 5
- 10        An outbound call that consumes a member's units will also create a consumption transaction to the CC platform for audit purposes and to update the member's balance on their member profile.
- 15        The member will be able to obtain their current account balance within the IVR. A member's account balance is played to them before the main menu is presented.
- 20        If a member earns additional reward system units by participating in a survey, listening to a special branded message, or playing an interactive game then their updated balance may be spoken to them to assure them that they have received their reward.
- 25        After a member has entered the digits for their outbound call, the IVR will speak their account balance in terms of how many minutes they have available for the call they have just placed. This balance of time will be calculated based on the rate of unit consumption for that call and will be rounded down to the nearest minute. For example, if they have 6 units remaining in their account but are placing a call that has a 3 units : 1 minute rating ratio, then this rated balance will read "You have up to 2 minutes for this call". If a member's rated balance does not allow for at least a one minute call, they will not be played their balance but will instead be told that they do not have sufficient units to place the call.

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After a member has ended an outbound call, they will be played their new account balance and returned to the main menu.

5           Branded messages will be offered at two points within the IVR call flow. Type A messages are typically short messages (5 - 10s) and are slotted to play after the member has entered their member number and password. Type B messages are typically longer messages (5 - 30s) and will be available under option 1 on the main menu ("To listen to messages, participate in surveys, and earn reward system units, press 1"). Type A messages can be recycled and played with Type B messages so that a member has the  
10           opportunity to listen to them again.           After the member has entered their member number and password, the IVR system will check the CC MEMBER\_MESSAGE table to determine whether the member has any Type A branded messages that should be played at this time (complete or expired messages are not considered). The next message to be played for a member is  
15           based on which one has the highest priority and is the oldest within that priority level. A message code is returned from the MEMBER\_MESSAGE table which must then be translated to a voice segment. The message code is looked up in the CC BRANDED\_MESSAGE table to determine which voice segment to play, the type of play (hard or soft), and whether there is a reward  
20           for fully listening to the message. The message is then played to the caller.

          If the caller presses a DTMF key before the end of a soft play message (but after 2s of play) then a message transaction record is created with the message code, the member number, the length of time the member listened to the message, and a "partially listened" status. If the caller fully listens to the  
25           message then a message transaction record is created with a "fully listened" status. If the message was fully listened to and a reward is offered, the member's account must be immediately updated to reflect the reward and a reward transaction must be created and sent to the CC for audit purposes. If the caller pressed zero before the branded message finished playing they will  
30           be transferred to the CSC (any other key will not have an action associated

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with it). The member's account balance is played after the branded message. It must reflect any additional reward that was given for listening to the branded message. The member will hear a maximum of 1 branded message per call. If the branded message is flagged as recyclable, then the message's  
5 priority for that member is lowered so that it will be considered again but only after other messages have been considered. If it not recyclable, then the message for that member will be flagged as complete.

If the caller chooses option 1 on the main menu and then selects to listen to branded messages, they will be presented with all Type A and Type  
10 B branded messages. The branded messages will be ordered based on priority and age. If the message is soft play, the member will have the option to interrupt by pressing a DTMF key which will stop the message from playing. The caller will be instruct that the # key is to be used to interrupt/skip a message. With this interrupt, or when the message had finished playing, the  
15 caller will be presented with three options. They can listen to the message again, move on to the next message, or return to the menu. After a message has been listened to (either fully or partially) a message transaction record will be created. If there is a reward for "fully listened to" messages, then the member's account is updated with the reward and a reward transaction is  
20 initiated. If the message is flagged as recyclable then the priority of the message is lowered so that it moves further down in the queue otherwise, the message is flagged as complete and will not be offered to the member again.

Surveys and interactive games will be offered through option 1 on the main menu ("To listen to messages, participate in  
25 surveys, and earn extra reward system units, press 1").

If the caller selects option 1 from the main menu and then selects to participate in surveys and games, the IVR system will check the CC MEMBER\_SURVEY table to determine whether the member has any surveys or interactive games to present at this



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time. The member will be able to participate in all surveys or games that have been assigned to their member number. The order in which these surveys are to be presented for a member is based on which survey has the highest priority and is the oldest within that priority level. The survey codes are returned from the MEMBER\_SURVEY table and must then be translated to a state table name for each survey. The survey code is looked up in the CC SURVEY table to determine which state table to invoke and whether there is a reward for completing the survey. By branching to a state table, this survey and game feature is very flexible and can involve anything that is possible within the IVR world.

The beginning steps of a survey or game will include a brief explanation of what it is about. For example, "Partner X will reward you with 5 reward system units to answer the following survey". The introduction will also give the caller an option to continue or skip. If the caller chooses to skip the survey or game they simply move on to the next survey that was assigned to them. If the caller continues and partially completes the survey or game then a decision is made within the survey or game whether it should be made available to the caller again (either to complete or to redo). A decision will also be made within the survey about creating a survey transaction record for partially completed surveys. If the caller fully completes the survey then a survey transaction record is created and the survey for that member is either marked as completed or it is recycled by lowering the priority. If the survey was fully completed and a reward is offered, the member's account must be immediately updated to reflect the

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reward and a reward transaction must be created and sent to CC for audit purposes. The actual results of a survey or game will be transmitted (if necessary) via the CC to the transaction processing kernel for analytics. This transmission of results will not be a  
5 standard transaction as the data produced by a survey or game will vary depending on the survey or game.

Wherever a menu selection is offered in the IVR system, an option on this menu will be to zero out to the customer service centre ("To speak with a reward system customer service centre  
10 agent, press 0"). Most of the voice prompts that are played to the caller are soft play and can therefore be interrupted at any time by a DTMF key. If a menu follows one of these prompts then a caller pressing zero during the prompt will transfer their call to the CSC. For example, the member is listening to their account balance and  
15 presses zero. This zero interrupts the playing of the account balance and is interpreted the same as the caller waiting for the main menu to play and then pressing zero. The member can also zero out to the CSC while listening to a soft play branded message.

There will also be a tunable option (turn it on or off) that  
20 will automatically zero out a caller to the customer service centre when they appear to be having difficulty using the IVR system. For example, the caller was given two tries to enter their member number but the IVR did not detect a response. The caller will be told they are being transferred a CSC agent and can choose to  
25 either stay on the line or hang up. The CSC agent can then assist

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the caller in determining their difficulty (rotary phone, insufficient time, etc). The caller could also be transferred to the CSC if they appeared to be deliberately trying to defraud the system (eg. member number hunting or guessing passwords).

5                   Alternatively, a transfer to the customer service centre could be accompanied by a screen pop based on member number information and perhaps based on where the caller was in the IVR when they pressed zero. The CSC agent will then be able to better assist the caller as they would already have an idea why the caller  
10                   was transferred to the CSC.

                  Once in the IVR system (member number and password have been entered), the caller should be able to transfer units from their account to any other valid member's account in the reward system PCS. This option will be available on the administrative options  
15                   sub-menu.

                  When the caller chooses the member to member transfer option, they will be asked to enter the number of units they wish to transfer. Once the system has validated that the caller did not enter an amount greater than their account balance, the caller will be  
20                   asked to enter the member number to which they wish to transfer the units. The system will then verify that the "transfer to" member number is valid. The caller will not be asked for the other member's password. The "transfer to" member number and the number of units to transfer will be repeated to the caller. The  
25                   caller will be given the option to continue (if the information is correct) or restart (if the information is not correct). A member to

- member transfer will immediately update the two members account balances. A consumption transaction will be created for the "transfer from" member and sent to the CC for audit purposes and to decrement the member's balance in their member profile. A
- 5 reward transaction will be created for the "transfer to" member and sent to the CC for audit purposes and to increment the member's balance in their member profile. Note: the alternative option being considered is to send a special member to member transfer transaction to the CC for audit purposes.
- 10 Another alternative is to support cellular debit calling. As a result of the mobile nature of the caller, issues such as location of the caller (roaming or out of home area) must be considered. The caller dials something like \*99 to connect them to the reward
- 15 system debit application through which they will enter their member number and password and place their call. The rating (unit consumption) for a cellular call may be different than for a land based call and may also involve a long distance debit. The member will only have one account of units from which either land based or cellular calls are debited.
- 20 The IVR system may be able to expand to include other options without significantly changing the current options - so as to avoid confusion for the caller that has become experienced at using the system. Other functions may include: faxing of account
- 25 information (may consume units); information services (eg. sports, horoscopes) that may consume units per use; etc.

## 2.0 Customer Service Centre

The Control Centre will be the interface to the reward system Customer Service Centre. All information that is required for the CSC screens will be derived from the CC databases and the debit platform databases.

- 5        The Customer Service Centre will have a screen based application to gather and access reward system data. The CSC agent's screen is populated with member profile data as the call is being transferred (provided that the caller zeroed out from the application after entering their member number).

10       The following pages contain details on the main areas of functionality for the CSC application.

### Program Information

- Explain the loyalty program

15       Explain to members and non-members the reward system concept, who the partners are, how to enroll, how to gather and use units, the rating schemes of the different partners, etc. This information may either be stored online or in a manual at each agent's workstation.

- Create fulfillment requests for members

Generate a fulfillment request in the reward system to initiate a mailout of information.

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- Explain branded messages and surveys

Give assistance about listening to branded messages, answering surveys, or playing interactive games that are currently setup in the system.

### **Member Profile**

- 5                   • Enroll new members into the program

Agents will be able to collect all pertinent enrollment information from the caller into their reward system CSC application. The application will guide them as to the required information and will allow a completed application to be submitted to the CC for processing. The enrollee will receive their reward system card in the mail once the system has processed their application (they will not know their member number until they receive their card).

10

- Correct enrollments

A feature on the CSC application will be to bring forward any enrollments that did not pass the validation process (eg. incomplete data that would prevent the enrollee from being properly serviced by reward system). The CSC agent will place outbound calls, fill in the missing details, and submit the enrollment for processing (the enrollment must contain a valid phone number).

15

- Query member profile

20                   Query with member number to retrieve member profile information (eg. name, address). Queries using other fields will also be required (eg. by name). This function will be used to personalize the conversation between the

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CSC agent and the member as well as to inform the agent of special considerations (eg. hearing impaired, gold rated reward system member).

- Update member profile

5        A query will be initiated to retrieve the member profile information so the CSC agent can verify that the caller is the member. The CSC agent can then change any of the displayed information (eg. name, address, language). Note that a change to a member's spoken language will be reflected on the debit platform.

- Retire or reactivate members

10       Based on a request to do so by a member, the agent will be able to initiate a transaction to the CC to retire or reactivate a member.

- Maintain a contact log

15       All calls between CSC agents and members will generate a contact log record so that member's comments/complaints/suggestions can be collected and recorded as part of their profile information.

- Gather member details/statistics

20       The CSC agents may be able to gather remarks about a member that would be useful in future dealings with that member (eg. hearing impaired, preferred calling time frame for accepting calls, etc.). Also, the CSC agent may ask the member to answer survey questions either on the inbound call or by making outbound calls.

**Member Card**

- Initiate a password reset

5           Once the CSC agent has verified that the caller is the member, the agent can initiate a password reset transaction to the CC. This transaction sets the member's password reset flag on the debit platform which will then force them to enter and verify a new password the next time they call into the IVR. The ability to do this may be restricted to CSC supervisors as the member will be required to give their personal validation number (eg. mother's maiden name)

- 10           • Handle a lost card problem

A procedure needs to be developed to handle this - the details of the procedure will drive the system requirements.

15           The options are a) to try to determine the member's number so that a replacement card can be mailed to them or b) to re-enroll the member as if they had just joined. With option A, a fulfillment request will be initiated to the CC to send the replacement card. With option B, a new enrollment transaction will be sent to the CC, the member will lose their units and reward system will lose any previous data that had been collected on the member.

- 20           • Create a fulfillment request for additional cards with the same member number.

- Unlock a member's card

A member's card is locked by the PCS system while it is in use. It



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may remain locked if there was a significant system problem while the member was using their card. This unlock process will first verify that the card is not locked because it is currently in use, then it will send a request to the CC to unlock the card. The unlock will be immediately effective.

5                   • Add units to a member's card

At the CSC agent's discretion, units may be added to a member's card to compensate for a problem. These units can be charged to different sources (such as a specific partner). This function will initiate a transaction to the CC to immediately update the member's balance and create a  
10           MEMBER\_REWARD\_TXN as an audit.

**Member Account Information**

• Query account information

Query with member number to retrieve the member's card balance and a history of debits and credits to their account.

15                   A member's unit accumulation history consists of reward transactions that show how the member acquired their units and from which source (purchases at partners, CSC agents, branded messages, surveys, other members). If the reward is a summary reward (eg. it is composed of several purchase transactions from a partner) then it will be highlighted and the CSC  
20           agent may perform a drill down operation to further define how that summary reward was calculated.

A member's unit consumption history consists of consumption

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5 transactions that show how the member used their units (outbound calls, transfers to another member). Outbound calls will show the number that was called, the duration of the call, and the number of units that was consumed by the call. Transfers will show the member number of the person that the units were transferred to.

Note: This information should be at the same level of detail as the information displayed on member statements (3 months).

## CC Transaction Processing

10 The CC Transaction Processing centre interfaces to the reward system PCS system (debit platform), the reward system Customer Service Centre, the Transaction Processing centre, and the IVR Enrollment process. Transactions are received from and sent to these interfaces either in a batch or reward system mode. The CC TP centre houses transaction databases that are used for audit purposes and well as for queries from the CSC and the reward system  
15 PCS.

20 There will be a suite of applications that will handle member enrollment. The system design to handle these will depend on the method of enrollment. For example, an electronic kiosk may require a direct link to the member profile database and may simulate real-time enrollment. An IVR application can capture DTMF and voice input to create an enrollment record. If enrollments are collected from the customer service centre then screens will need to be designed so that the customer service centre agents may enter the member information directly into the system. If enrollments are gained through amalgamating with already existing loyalty programs then a download

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file from the new partner's loyalty program may be the best solution (however, file format and data transfer issues will need to be resolved).

Member transactions with a type "enrollment" will be sent from various sources in either batch or reward system to the High-level Control Centre for validation and processing.

- Collect enrollment data

Regardless of the method used to collect the enrollment data from the prospective members, the result will be a transaction to the CC (either batch or reward system). The format of this transaction (MEMBER\_TXN) is outlined in the reward system Database Design document.

- Validate enrollment records

As enrollment transactions are received, they are validated and recorded in the MEMBER\_TXN table as either *new* (passed validation) or *corrections pending* (did not pass validation). CSC agents will be able to modify transactions that are flagged as *corrections pending* and resubmit them for processing. Any enrollments that originate from the CSC, new or corrected, will have been validated online so that they do not recycle continuously through the system causing frustration to both the CSC agent and the enrollee.

- Assign member numbers

A process will periodically search the MEMBER\_TXN table for validated enrollments. A member number will be chosen from the pool of unique member numbers and will be assigned to the enrollment to complete a new member profile. The member number will be flagged as *in use* in the

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MEMBER\_NUMBERS table and the new member profile record will be added to the MEMBER\_PROFILE table.

- Activate the new member

5 After the MEMBER\_PROFILE record has been created for the new member, the member will be activated on the debit platform by adding their member number to the reward system PCS CARD\_NUMBER table.

- Forward member profile to the online analytical processing system

10 A batch process will be run at least daily to send the new member profiles, with member number, to the transaction processing kernel. The transaction processing kernel will add them to their member profile table and issue a welcome kit to the new member. The welcome kit will contain the member's reward system card with their member number printed on the card.

### Member Number Maintenance

- Generate new member numbers

15 As the pool of available member numbers declines, new member numbers will be generated and added to the pool (MEMBER\_NUMBERS table). The generation process will take into consideration all currently existing member numbers and will not create duplicates.

- Manage the member numbers

20 When member numbers are assigned to new enrollments they are

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flagged as *in use*. They remain in this state until the member retires (or is suspended). When a member retires, the member number is removed from the debit platform (member deactivated) and it is also flagged as retired in the MEMBER\_NUMBERS table. If the member does not reactivate within a specified period of time then the member number is made available for reuse. Reward system will have to determine a policy with regard to whether a member loses their accumulated units by retiring.

- Database synchronization

A process will be run periodically to verify that the debit platform CARD\_NUMBER table remains in sync with the CC MEMBER\_PROFILE table. All member numbers on the debit platform must relate to non-retired and non-suspended member numbers in the member profile table and must have the same account balance.

The CC MEMBER\_PROFILE table must contain member numbers that match member numbers in the MEMBER\_NUMBERS table. The status of the member numbers must also be similar, that is an *in use* number in one table cannot relate to a retired number in the other. Numbers that are not *in use* or *retired* in the MEMBER\_NUMBERS table must not exist in the MEMBER\_PROFILE table.

The CC member profile table must also be verified with the online analytical processing system member number table to ensure that these two are identical.

### Member Profile Information

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**Note:** The full member profile database to be used for analytics will be designed, developed and managed by transaction processing kernel but a subset of this database will need to reside in the CC so that member profile information is available to the customer service centre agents. The information collected in the CC will pertain to information that is required during the enrollment process; information that can be changed by the member calling the CSC; and information that can be changed via an IVR function (eg. language). All data contained in the CC tables of the member profile database will be created, updated, and deleted by the CC. That is, the CC has the master version of these tables. A copy of new, updated, or deleted records will be sent to the transaction processing kernel so that the corresponding tables in their member profile database can be maintained.

- Process member profile updates

Member profile updates will be received in reward system or batch from the customer service centre (eg. name, address) or the IVR (eg. language) or transaction processing kernel (eg. from white mail processing). The CC will record these transactions in the MEMBER\_TXN table, validate the changes and update its member profile table. It will forward these changes to the transaction processing kernel to update their member profile table and will also update the debit platform if required.

- Process member profile retirements or suspensions

The customer service centre can initiate retirements or suspensions at a member's request or the CC can determine that a member should be retired or suspended based on account inactivity or fraudulent use of the system. The CC will record these transactions in the MEMBER\_TXN table. It will forward these updates to the transaction processing kernel to update their member

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profile table. The CC will also apply these changes as deletes to the CARD\_NUMBER table in the debit platform database.

- Forward miscellaneous fulfillment requests to the transaction processing kernel

5 Fulfillment requests will be created for welcome kits, replacement cards, program or partner information, and account statements. These requests will come primarily from the CSC.

- Forward any member number based data collection to the online analytical processing system for analysis

10 This type of information will be from survey responses or member comments that were collected in the IVR or by the CSC. A member's demographic information (eg. number of cars) may also be collected via the IVR or CSC. These two types of information will not be stored in the CC member profile table but will be transmitted to the transaction processing  
15 kernel to be stored in their data warehouse. The type of information collected may vary so a flexible process needs to be developed to handle this data transfer.

### **Member Reward Transactions**

- Receive member reward transactions from the online analytical  
20 processing system

Initially there will be a batch process for transmission of this data. These rewards are derived from member purchases from partner point of sale

5 systems. The reward, with purchase information, is captured in the MEMBER\_REWARD\_TXN table for audit purposes and for the CSC interface so that an agent can explain to a member how they earned their units. After the transactions are added to the table, they are summarized by member number and the member's balance is updated with the reward on the debit platform CARD\_NUMBER table and on the CC member profile table.

- Receive member reward transactions from the Customer Service Centre

10 These rewards are generated when a CSC agent gives a member units because of a problem they experienced. They are sometimes associated to a particular partner if the member's concern relates specifically to a partner. The reward is captured in the MEMBER\_REWARD\_TXN table with the CSC agent's id for audit purposes and for queries by the CSC. Immediate reward system update to the member's balance on the debit platform  
15 CARD\_NUMBER table is required. The member's balance on the CC member profile table is also updated.

- Receive member reward transactions from the debit platform

20 Reward transactions will be received from the debit platform for member to member transfers of units, branded messages, and survey completion. These rewards have already been added to the member's balance in the CARD\_NUMBER table but need to be added to the member's balance on the member profile table. They also need to be captured in the MEMBER\_REWARD\_TXN table for audit purposes and for queries by the CSC.



- Transaction audit trail

5       The CC system should be able to track all transactions and if necessary re-process any transactions that were not processed successfully. The system should also be able to reverse any transactions that were sent in error (backing out a reward from a member's balance if necessary).

- Report any errors/anomalies

10       As reward transactions are processed, they will be validated and analyzed for errors such as unknown member number or "large" reward, etc. A facility will be provided to review and correct any errors/anomalies and resubmit the reward transaction for processing.

- Send member reward transactions to the online analytical processing system

15       Online analytical processing system will need a copy of reward transactions for rewards that were not generated by purchases (eg. units awarded by the customer service centre or from a survey) so that the information is available for statementing, billing, and analytics. This information will be sent in a batch process.

### **Member Consumption Transactions**

- Receive member consumption transactions from the debit platform

20       Member consumption transactions will be generated by the debit platform for outbound calls that consume a member's units. The member's balance on the debit platform CARD\_NUMBER table has already been

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updated but the member's balance on the CC member profile table needs to be updated. The consumption information is captured in the MEMBER\_CONSUMPTION\_TXN table for audit purposes and for the CSC interface so that an agent can explain to a member how they used their units.

5                   • Receive member consumption transactions for transfers

10                   A member to member transfer will generate a reward for one member and a consumption for the other. If this transaction originates from the debit platform then both members' balances on the debit platform have already been updated but the members' balances on the CC member profile table need to be updated. If this transaction originates from the CSC then the members' balances need to be updated on the debit platform CARD\_NUMBER table and on the CC member profile table. This transaction will be captured in the MEMBER\_CONSUMPTION\_TXN table for audit purposes and for queries by the CSC.

15                   • Send member consumption transactions to the online analytical processing system

A batch process will extract and send the member consumption transactions to the transaction processing kernel so that the information is available for statementing and analytics.

20                   • Transaction audit trail

The CC system should be able to track all transactions and if necessary re-process any transactions that were not processed successfully. The system should also be able to reverse any transactions that were sent in error (backing out a consumption from a member's balance if necessary).

- Report any errors/anomalies

As consumption transactions are processed, they will be validated and analyzed for errors such as unknown member number or "large" consumption, etc. A facility will be provided to review and correct any errors/anomalies and resubmit the consumption transaction for processing.

### Branded Messages

- Forward a list of valid branded message codes to the online analytical processing system

Once a branded message has been recorded and setup on all the IVR nodes and a code has been assigned to uniquely identify the message, it will be sent to transaction processing kernel so that members can be assigned to listen to the message. The information about a branded message is stored in the CC BRANDED\_MESSAGE table.

- Accept from online analytical processing system member message assignments

A batch file containing a list of targeted member numbers with a corresponding branded message code and priority will be sent from the transaction processing kernel to the CC. As the CC processes this file, it will add the member number and branded message code combination to the MEMBER\_MESSAGE table. There is a need to queue many messages for a member but to only play one per call. The member message table is essentially the member's queue of messages from which the debit platform chooses the next message to be played to the member during their call into the IVR.

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- Funnel member message information back to online analytical processing system

5 When a branded message has been listened to by a member, either partially or fully, a record is created in the message transaction table (MESSAGE\_TXN). This table records the date and time that the message was listened to and how much of the message was listened to by the member (number of seconds). A batch process will extract and send member message information to transaction processing kernel for "listened to" messages.

10 

- Record and apply rewards (if applicable) for fully listened to messages

- Automatically expire branded messages after a preset date

- Cancel branded messages at any time

Member messages can be cancelled either specifically by member number or globally like the expiry.

15 **Surveys (or Interactive Games)**

- Forward a list of valid survey codes to online analytical processing system

20 Once the survey or interactive game has been developed and setup on all the IVR nodes and a code has been assigned to uniquely identify it, it will be sent to transaction processing kernel so that members can be assigned to

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the survey. The information about a survey is stored in the CC SURVEY table. The call flow position field in this table will determine where in the call flow the survey can be offered.

- Accept from online analytical processing system survey assignments

5           A batch file containing a list of targeted member numbers with a corresponding survey code and priority will be sent from transaction processing kernel to the CC. As the CC processes this file, it will add the member number and survey code combination to the MEMBER\_SURVEY table. There is a need to queue many surveys for a member but to only play  
10           one per call. The member survey table is essentially the member's queue of surveys from which the debit platform chooses the next survey to be played to the member during their call into the IVR.

- Funnel member survey information back to online analytical processing system

15           When a survey has been fully completed by a member a record is created in the survey transaction table (SURVEY\_TXN). This table records the date and time that the survey was completed. A batch process will extract and send member survey transaction data to the transaction processing kernel for completed surveys. The survey responses will be sent to the transaction  
20           processing kernel through a separate process as this information will vary depending on the design of the survey.

- Record and apply rewards (if applicable) for successfully completed surveys

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- Automatically expire surveys after a preset date

- Cancel surveys at any time

Member surveys can be cancelled either specifically by member number or globally like the expiry.

## 5 Fraud Detection

- Provide system alarms and procedures to detect and deal with fraudulent card use.

## Telecommunications Reporting

- Manage the reward system call detail records on the debit platform

10 If this information is required for analytics, then extract it and send it to the transaction processing kernel. A history will be maintained for billing purposes as well as for telecommunications analytics. The CC will control the archiving of the cdr information from the reward system

15 CONSUMER\_CALL\_LOG and CONS\_OUTBOUND\_LOG tables on the debit platform.

- Provide information and reports that can be used to optimize telecommunications

Reports will be available to analyze the system usage and capacity requirements with regards to call volumes and peak periods. These reports

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will be used to optimize all aspects of the telecommunications from 800 number translations through to the Summa and DirectTalk.

Telecommunications reporting will also analyze the batch and reward system transaction processing of the CC.

- 5            Numerous modifications, variations, and adaptations may be made to the particular embodiments of the invention described above without departing from the scope of the invention, which is defined in the claims.

## CLAIMS:

1. A method of providing telecommunications rewards to a member comprising the steps of:
  - generating a point-of-sale transaction;
  - 5 relating the point-of-sale transaction to a member of telecommunications awards;
  - determining value of reward in dependence upon the point-of-sale transaction;
  - updating a member's profile for the member by the value determined.
- 10 2. A method as claimed in claim 1 wherein the step of generating a point-of-sale transaction includes the steps of scanning a UPC code card of the member, and looking up the UPC code in a UPC database.
- 15 3. A method as claimed in claim 1 wherein the step of determining value of the point-of-sale transaction to a member includes the step of referring to the member's profile and a rewards file.
4. A system for providing telecommunications rewards to a member comprising:
  - a data collection system;
  - a customer service centre;
  - 20 enrollment processes;



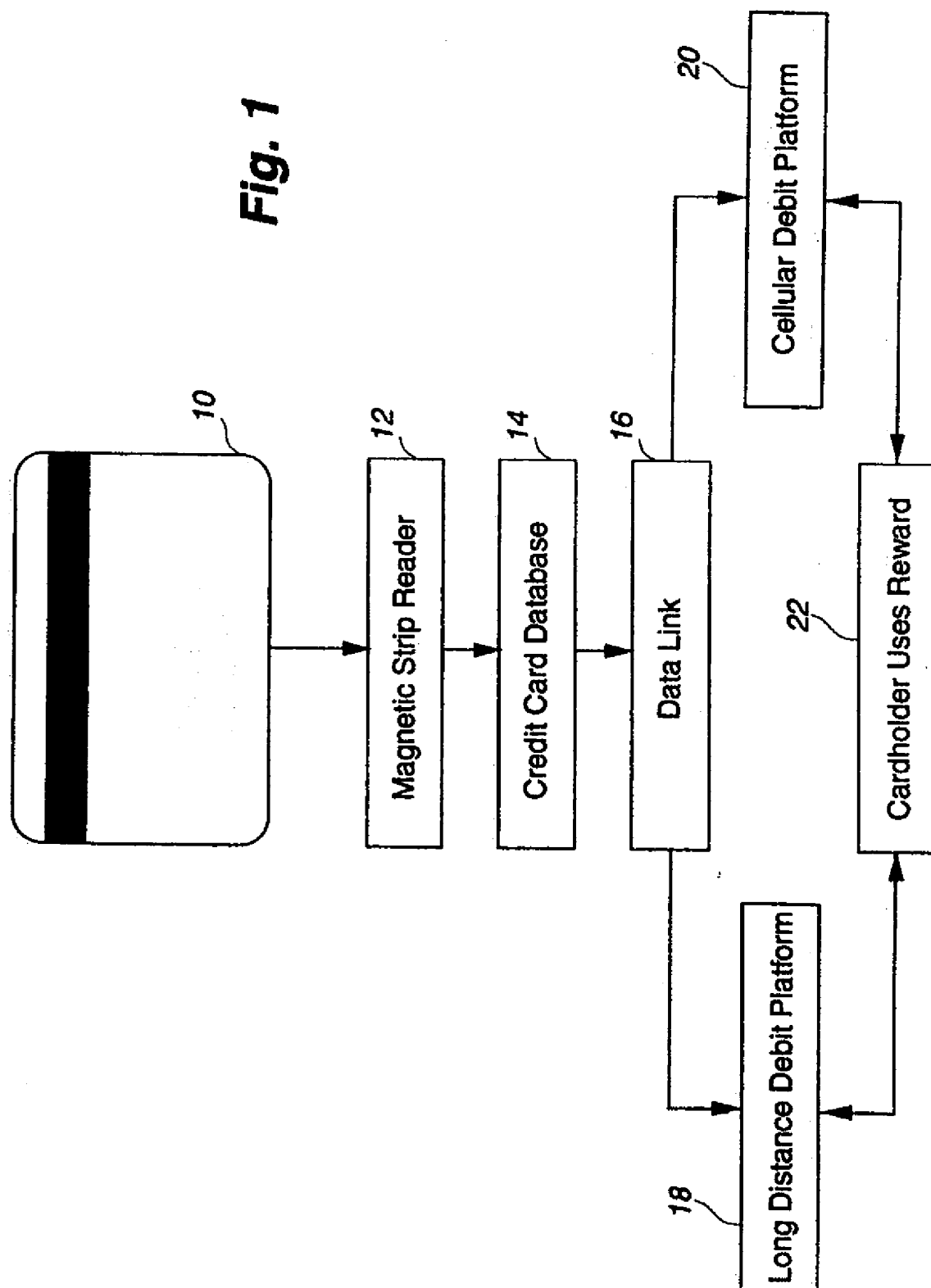
- 60 -

a transaction processing system for managing data from the point-of-sale collection system and members and for calculation of rewards;

a control center for processing system transactions for the customer service center, system access, debit platform management and enrolling processes.

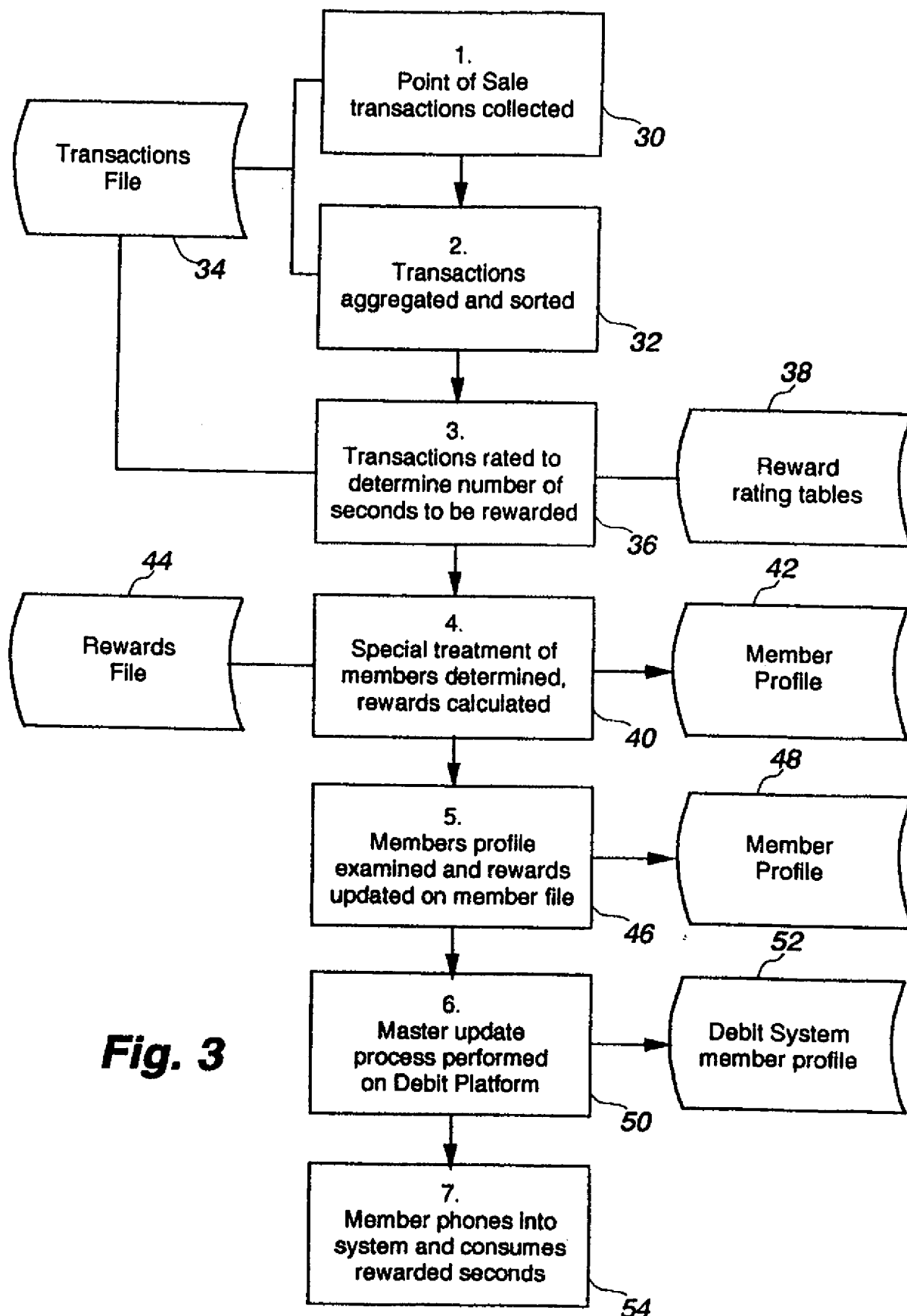
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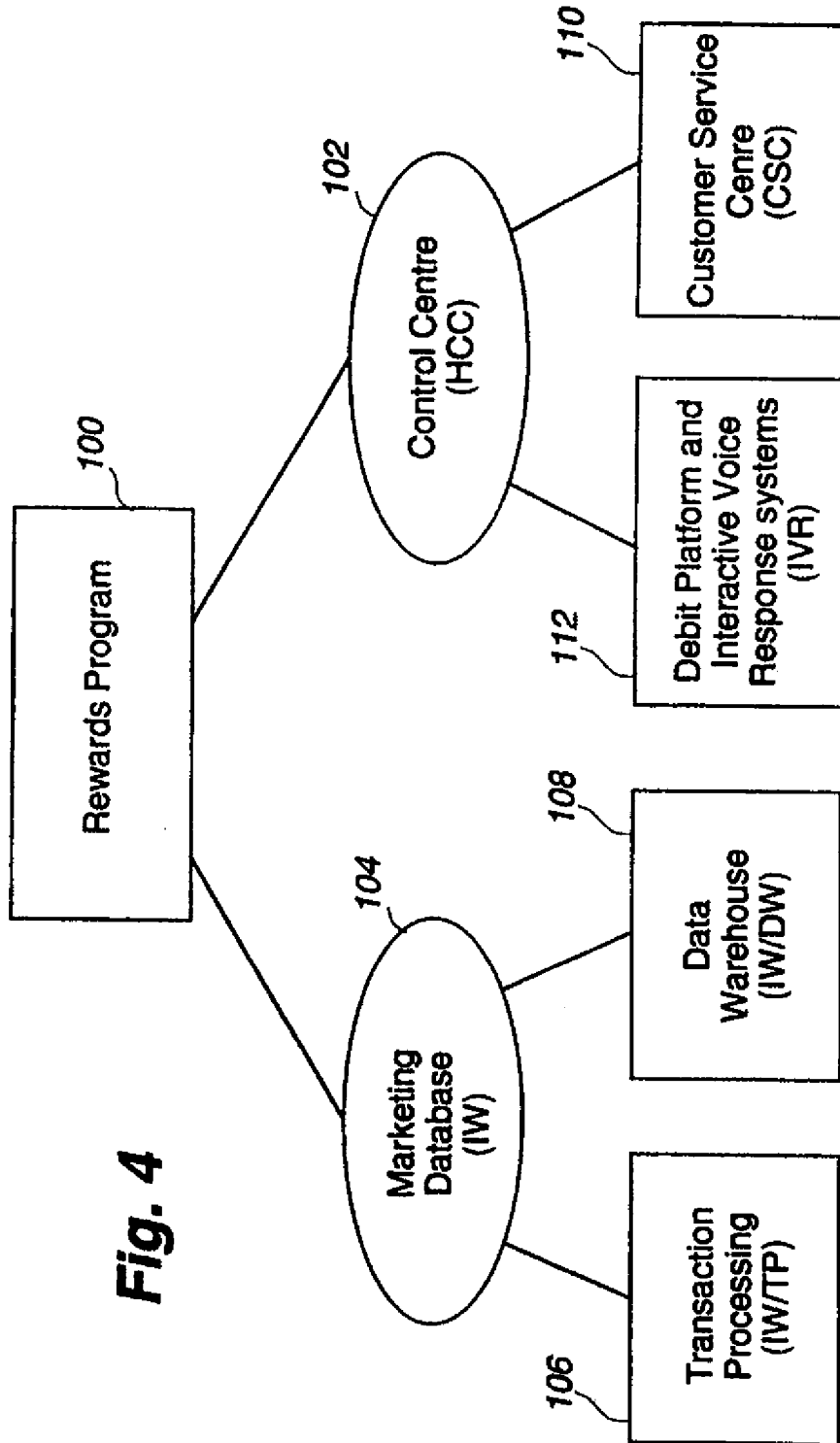


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**Fig. 3**

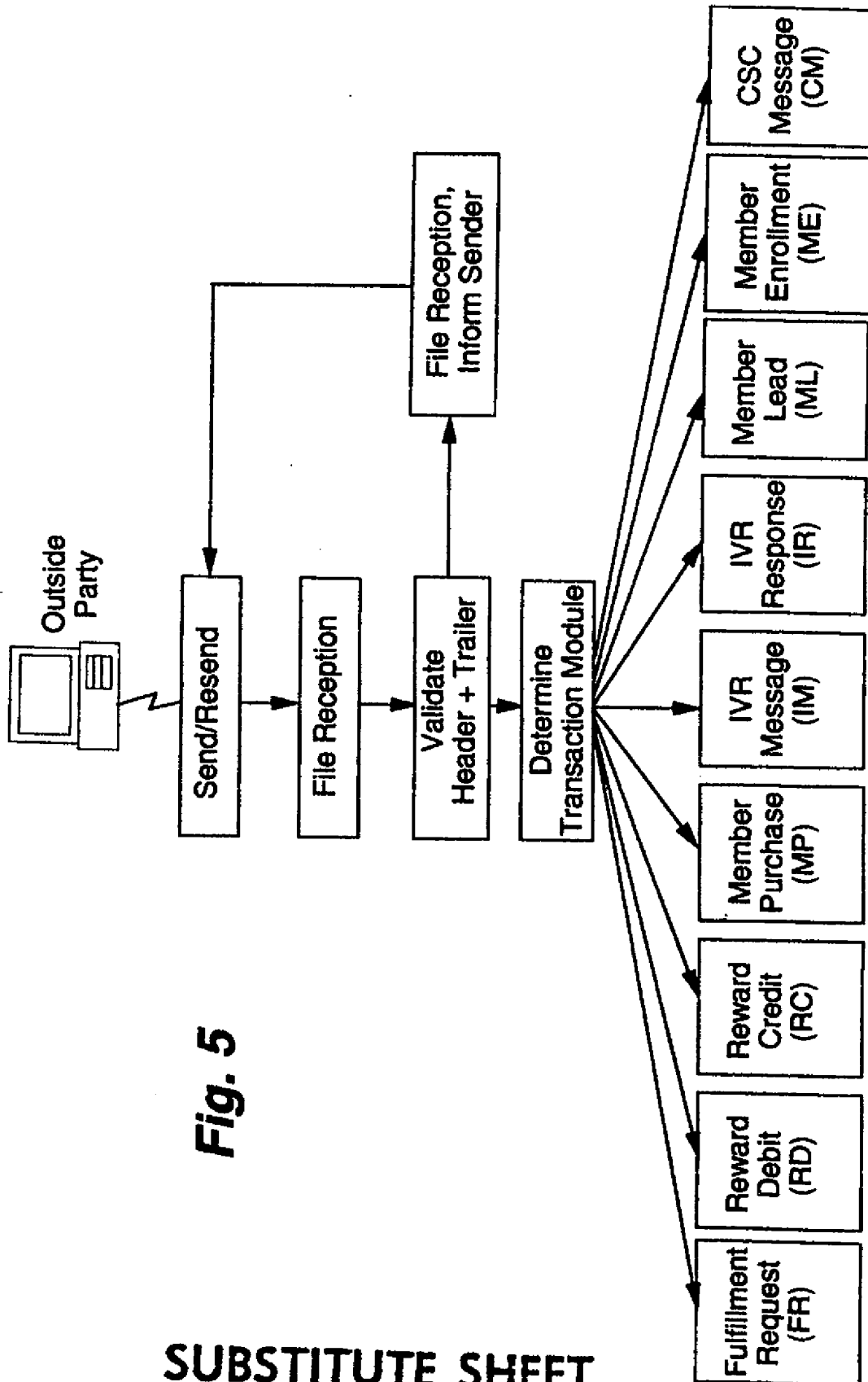
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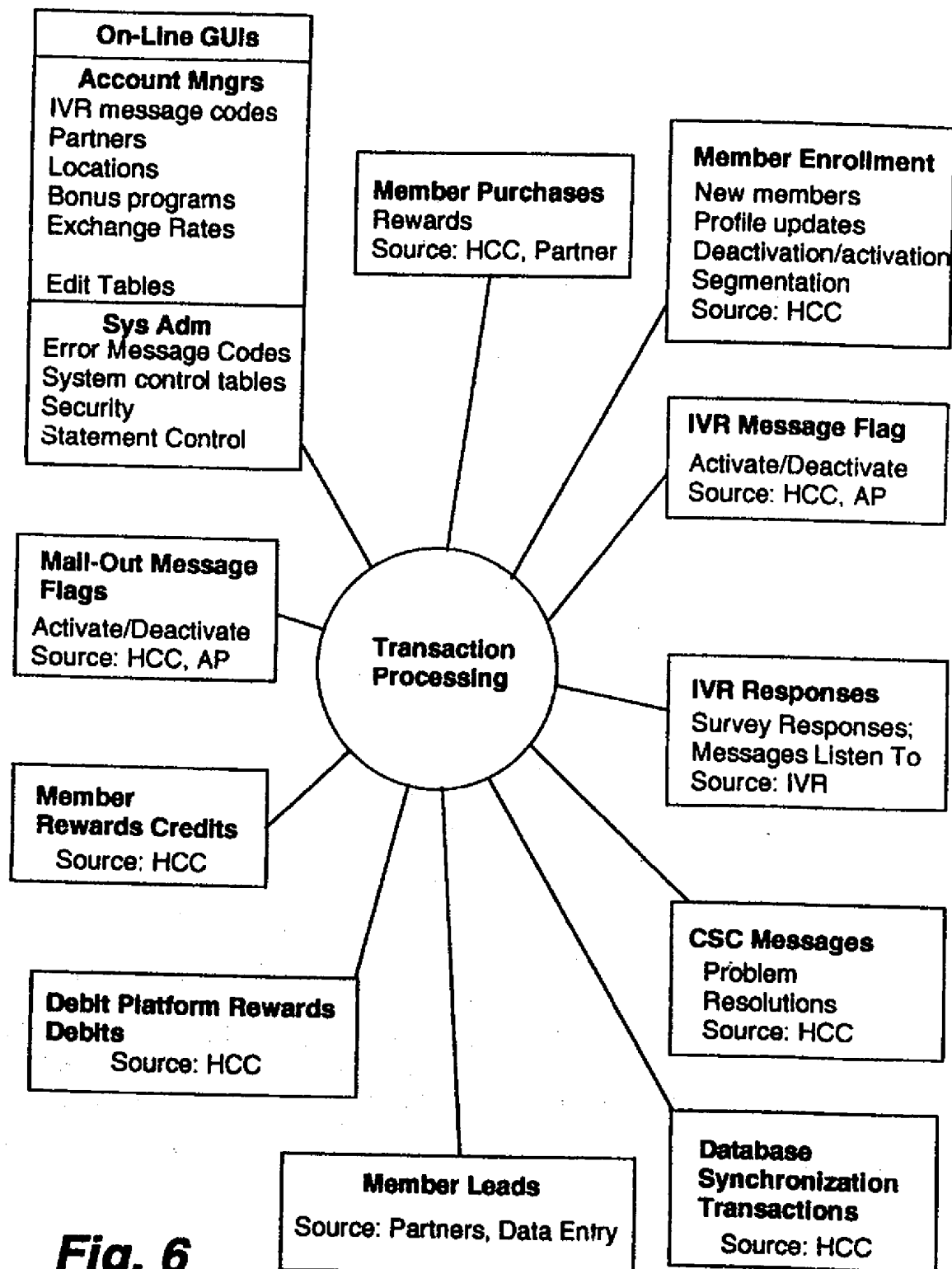
**Fig. 4**

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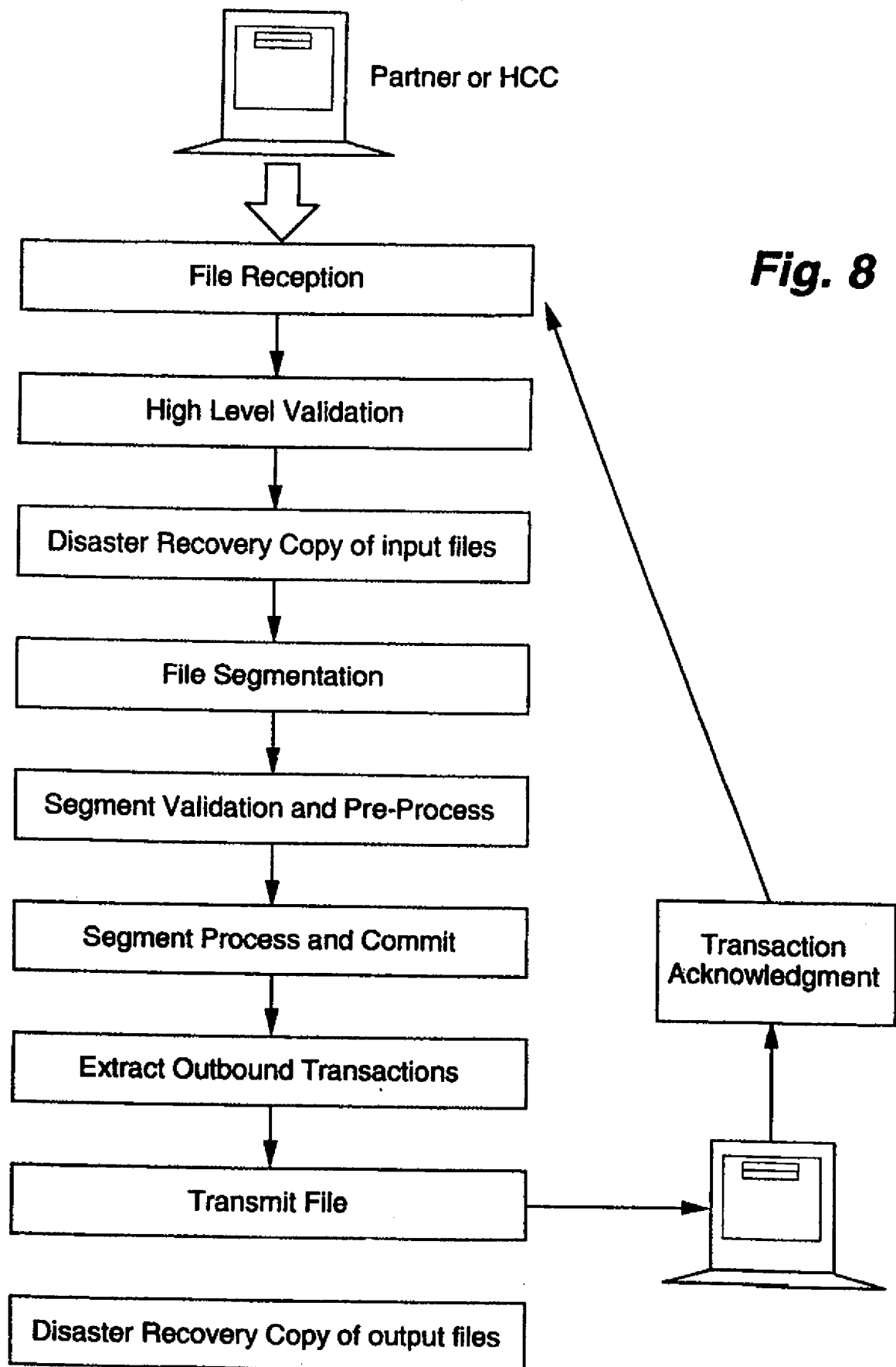
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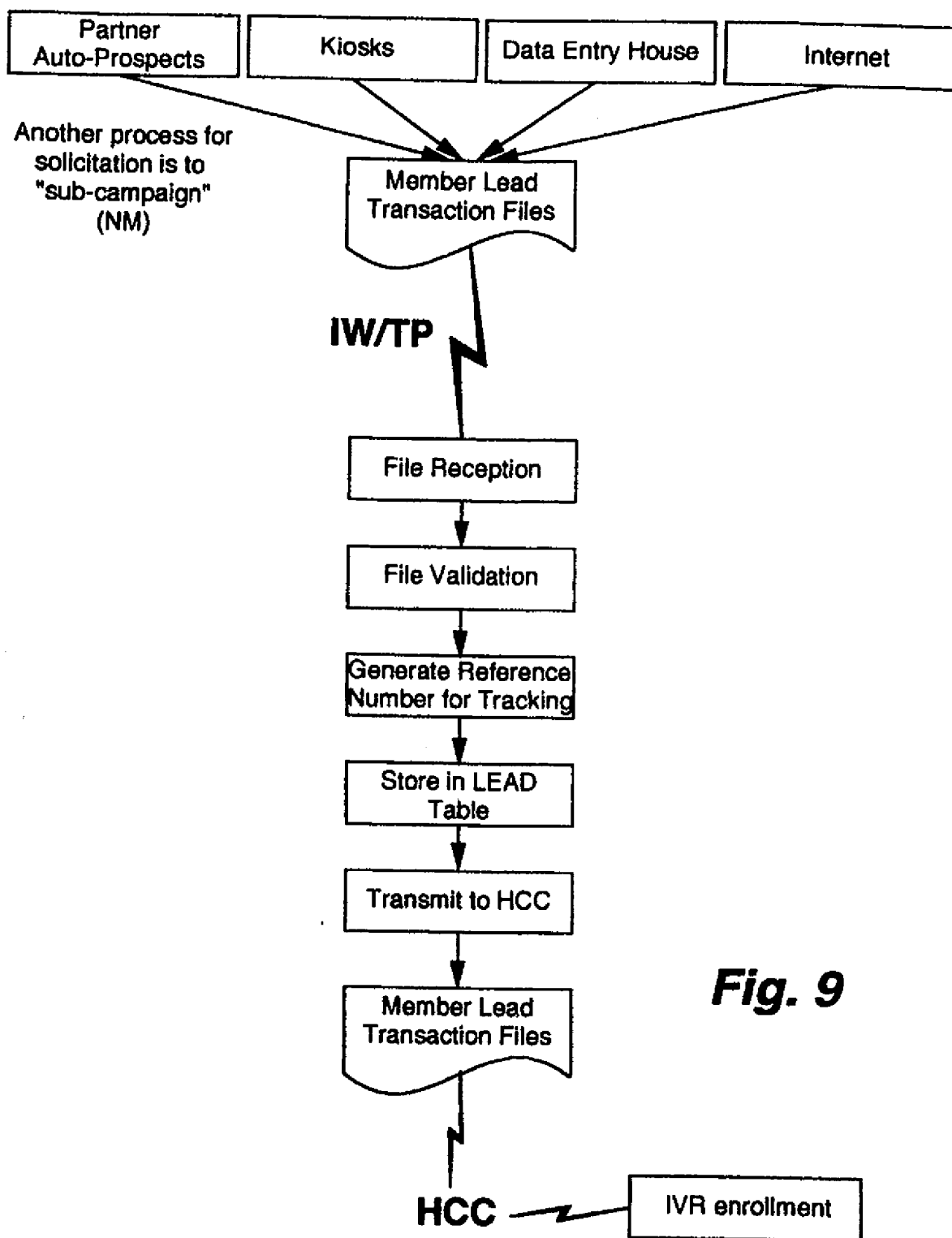
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**Fig. 6****SUBSTITUTE SHEET**

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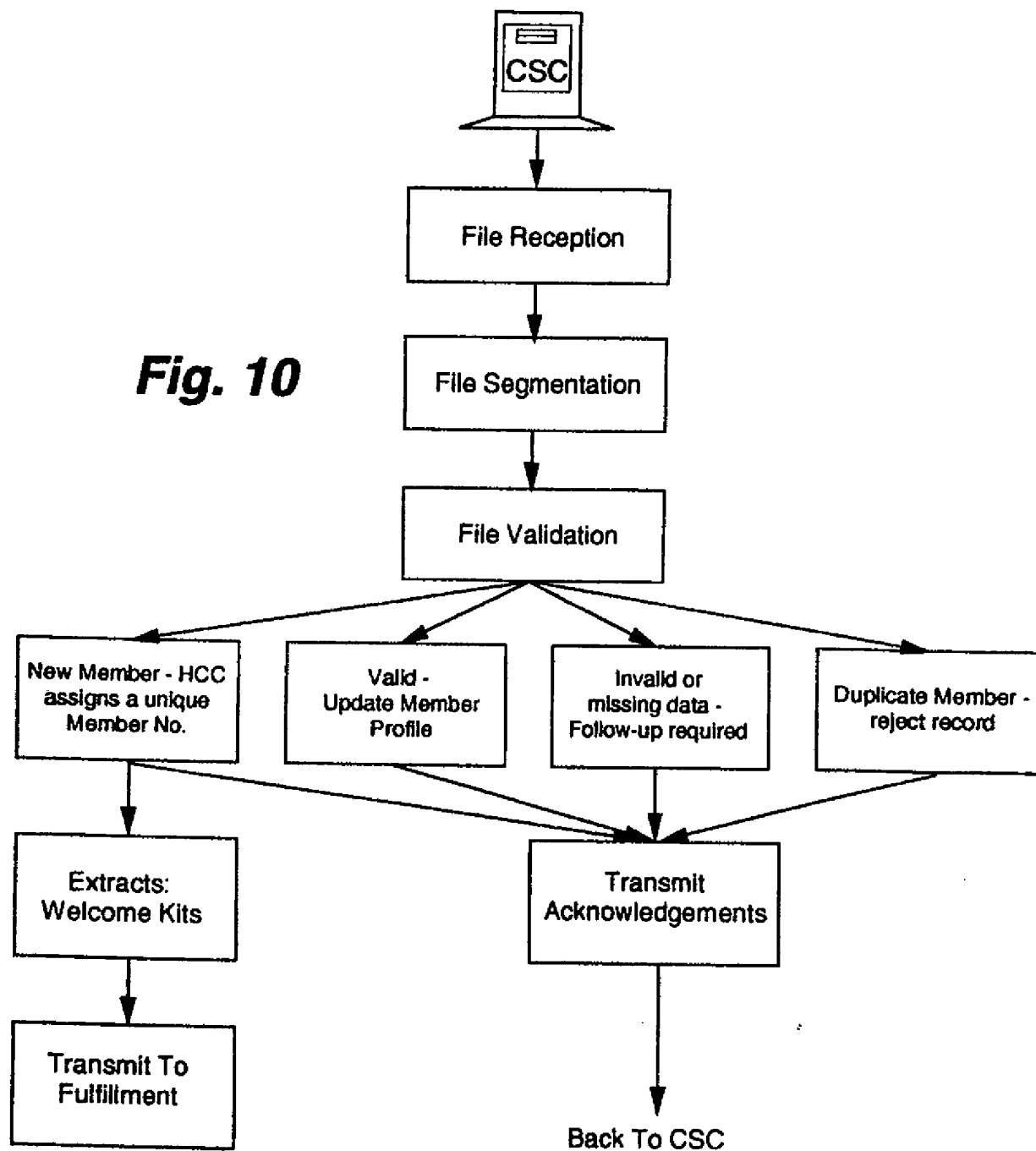
**Fig. 8****SUBSTITUTE SHEET**

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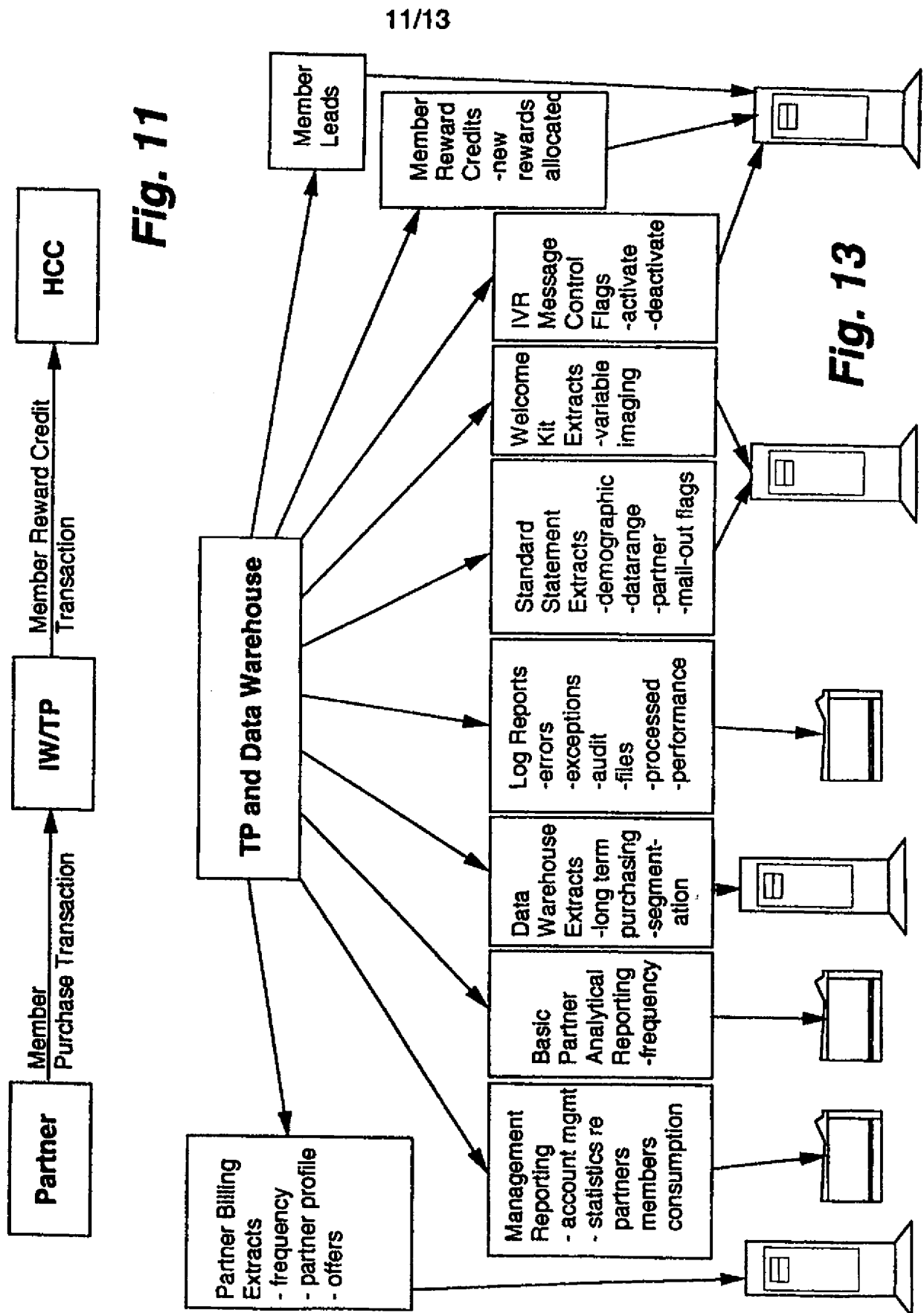
**Fig. 9****SUBSTITUTE SHEET**

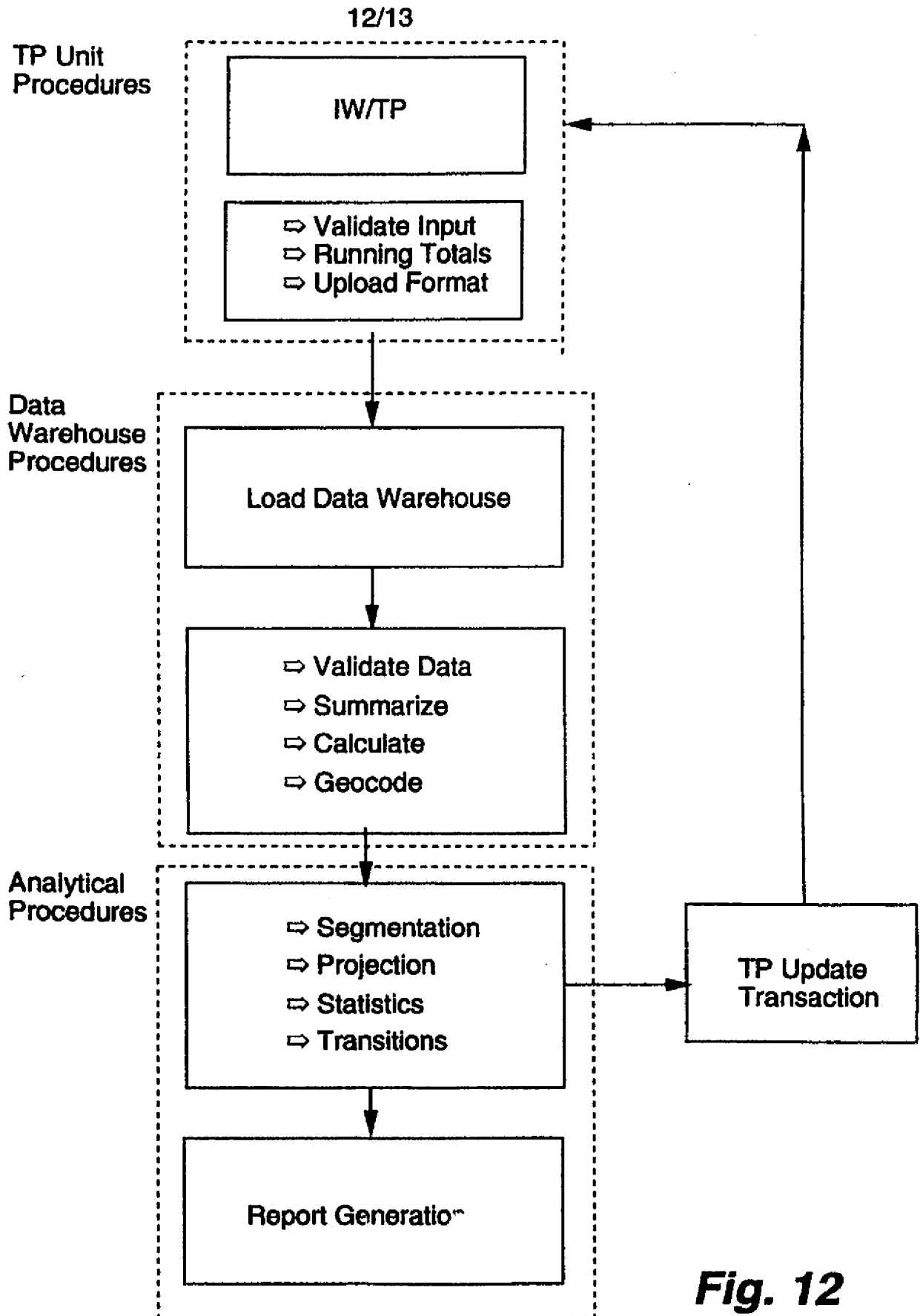


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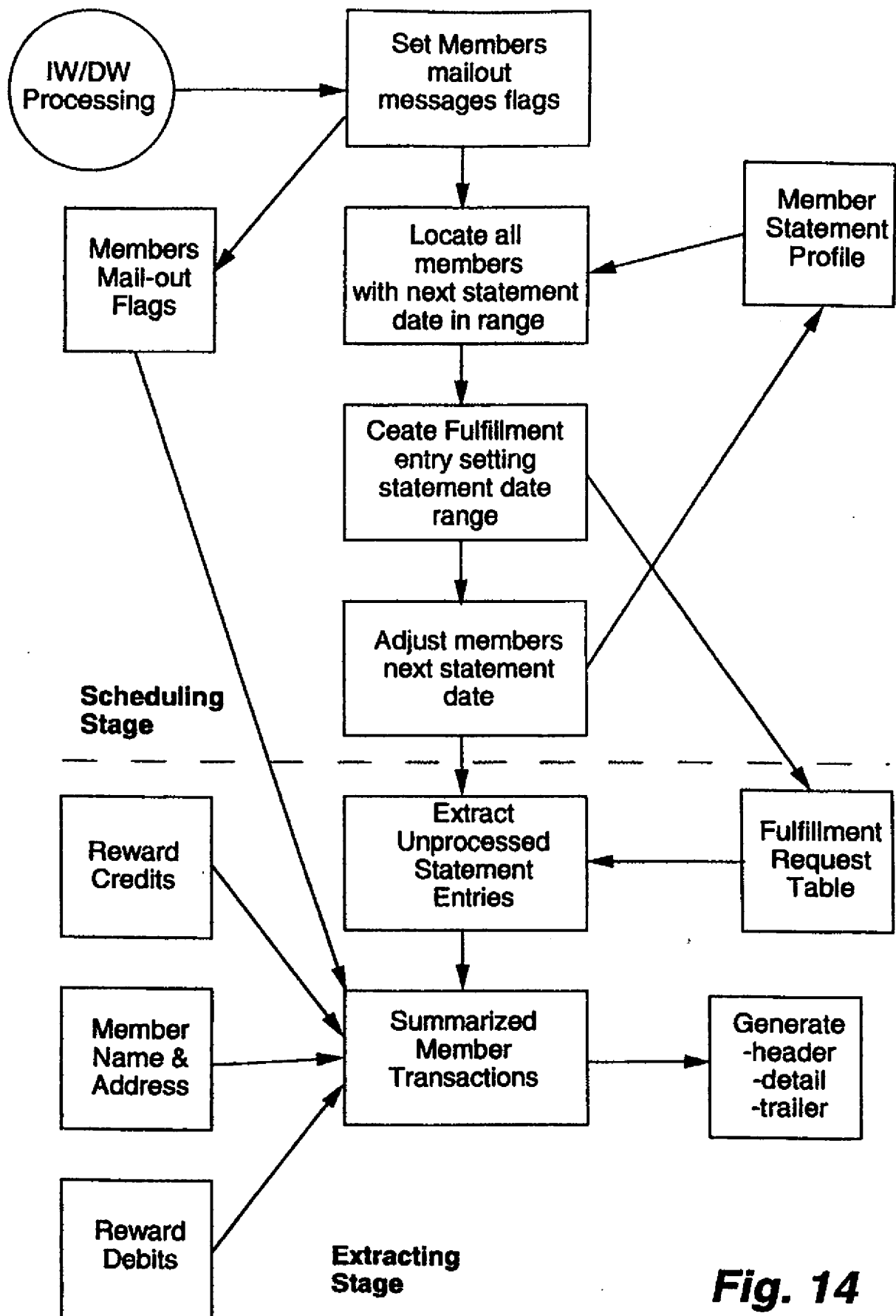


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**Fig. 12**

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**Fig. 14****SUBSTITUTE SHEET**

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/10773

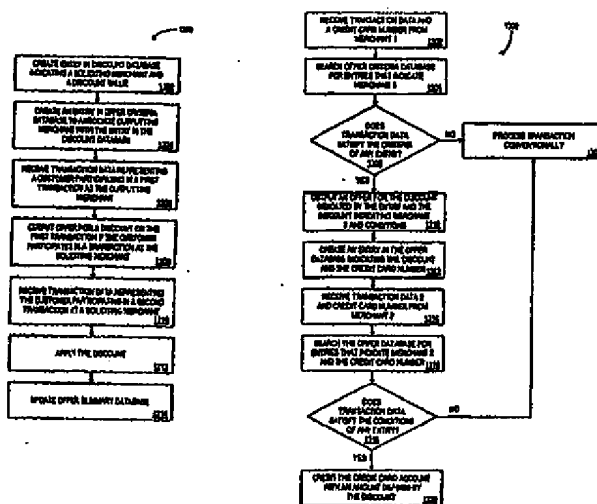
C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	US 5,606,496 A (D'AGOSTINO) 25 February 1997, see the abstract.	1
A,P	US 5,611,052 A (DYKSTRA ET AL) 11 March 1997, see the abstract.	1
A	US 5,450,938 A (RADEMACHER) 19 September 1995, see the abstract.	1
A	US 5,513,102 A (AURIEMMA) 30 April 1996, see the abstract.	1
A	US 5,297,026 A (HOFFMAN) 22 March 1994, see the abstract.	1
A	US 5,287,268 A (MCCARTHY) 15 February 1994, see the abstract.	1



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(54) Title: METHOD AND APPARATUS FOR PROVIDING A DISCOUNT TO A CUSTOMER THAT PARTICIPATES IN TRANSACTIONS AT A PLURALITY OF MERCHANTS



## (57) Abstract

A server computer or other device determines whether a customer has consummated a first transaction with a first predetermined merchant and a second transaction with a second predetermined merchant. If so, the customer is provided with a bonus. In one embodiment, the server receives first transaction data representing a first transaction at a first merchant. The server determines, based on the first transaction data, a discount and a second merchant. The discount is applicable if the consumer consummates a second transaction at the second merchant. The server then outputs an indication of the discount and the second merchant to inform the customer. Subsequently, the server receives second transaction data representing the second transaction at the second merchant, and in response the discount is applied.

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**METHOD AND APPARATUS FOR PROVIDING A DISCOUNT TO A  
CUSTOMER THAT PARTICIPATES IN TRANSACTIONS AT A PLURALITY OF  
MERCHANTS**

5    CROSS-REFERENCE TO RELATED APPLICATIONS

          This application is related to co-pending United States patent application Serial No. 09/098,240 entitled "SYSTEM AND METHOD FOR APPLYING AND TRACKING A CONDITIONAL VALUE COUPON FOR A RETAIL ESTABLISHMENT" filed on June 16, 1998 in the name of Jay S. Walker and Andrew S. Van Luchene; and is further related  
10   to co-pending United States patent application Serial No. 09/166,405 entitled "METHOD AND APPARATUS FOR DEFINING ROUTING OF CUSTOMERS BETWEEN MERCHANTS" filed on October 5, 1998 in the name of Jay S. Walker, Andrew Van Luchene, Daniel E. Tedesco, Magdalena Mik and James A. Jorasch (Attorney Docket No. WD2-98-048); and is further related to co-pending United States patent application Ser.  
15   No. 09/166,339 entitled "METHOD AND APPARATUS FOR MAINTAINING A CUSTOMER DATABASE USING LICENSE PLATE SCANNING" filed on October 5, 1998 in the name of Jay S. Walker, Joshua D. Rogers and Andrew S. Van Luchene (Attorney Docket No. WD2-98-059), each of which is assigned to the assignee of the present application and each of which is incorporated by reference herein as part of the  
20   present disclosure.

FIELD OF THE INVENTION

          The present invention relates to methods and apparatus for providing discounts.



## BACKGROUND OF THE INVENTION

Point-of-sale ("POS") terminals, such as cash registers, are used in a wide variety of businesses for performing such processes as calculating the total price of a purchase (goods or services), tracking inventory that is sold and calculating the amount of change due to a customer. In addition, POS terminals may also be used to read and process coupons used by customers and print coupons for customers.

When a customer uses a coupon during a transaction (e.g. a purchase of goods and/or services), a discount is applied to the transaction. For example, a price that a customer is charged for an item may be reduced, or the entire transaction price (sum of the prices of all items in the transaction) may be reduced. Businesses typically offer coupons to customers in an attempt to promote many objectives. One such objective is to entice customers to visit the business, thereby promoting customer retention. Coupons may further entice customers to visit the business more frequently. For example, a coupon may have an expiration date, and so the customer must use the coupon before that date or not at all. Businesses may also promote certain items by offering coupons that provide a discount only when those items are included in a purchase.

However, most discount offers that businesses provide cannot quickly respond to changing conditions of the business. For example, the business typically cannot know in advance precisely when it will need customers (i.e. "slow days") and when customers will be in abundance. Further, it is difficult to make customers aware of discounts in advance of when the customers will be most needed.

It would be advantageous to provide a method and apparatus for generating discounts that allowed a business to more effectively promote its various objectives.

#### SUMMARY OF THE INVENTION

5           It is an object of the present invention to provide a method and apparatus for generating discounts that allowed a business to more effectively promote its various objectives.

          In accordance with the present invention, a server computer or other device determines whether a customer has consummated a first transaction with a first  
10   predetermined merchant and a second transaction with a second predetermined merchant. If so, the customer is provided with a bonus.

          In one embodiment, the server receives first transaction data representing a first transaction at a first merchant. The server determines, based on the first transaction data, a discount and a second merchant. The discount is applicable if the consumer  
15   consummates a second transaction at the second merchant. The server then outputs an indication of the discount and the second merchant to inform the customer. Subsequently, the server receives second transaction data representing the second transaction at the second merchant, and in response the discount is applied.

#### 20   BRIEF DESCRIPTION OF THE DRAWINGS

          FIG. 1 is a schematic illustration of an apparatus provided in accordance with the present invention.

FIG. 2 is a schematic illustration of a server of the apparatus of FIG. 1.

FIG. 3 is a schematic illustration of a store controller of the apparatus of FIG. 1.

FIG. 4 is a schematic illustration of a POS terminal of the apparatus of FIG.

5 1.

FIG. 5 is a schematic illustration of an embodiment of a merchant database of the server of FIG. 2.

FIG. 6 is a schematic illustration of an embodiment of an offer criteria database of the server of FIG. 2.

10 FIG. 7 is a schematic illustration of an embodiment of a discount database of the server of FIG. 2.

FIG. 8 is a schematic illustration of an embodiment of an offer database of the server of FIG. 2.

15 FIG. 9 is a schematic illustration of an embodiment of an offer summary database of the server of FIG. 2.

FIG. 10 is a schematic illustration of an embodiment of an inventory database of the POS terminal of FIG. 3.

FIG. 11 is a schematic illustration of an embodiment of a customer database of the POS terminal of FIG. 3.

20 FIG. 12 is a flow chart illustrating an embodiment of a method that is performed by the server of FIG. 2 in accordance with the present invention.

FIG. 13 is a flow chart illustrating another embodiment of a method that is performed by the server of FIG. 2 in accordance with the present invention.

FIG. 14 is a schematic illustration of an apparatus provided in accordance with an alternate embodiment of the present invention.

5                FIGS. 15A and 15B are a flow chart illustrating another embodiment of a method that is performed by a web browser in accordance with the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In accordance with the present invention, when a customer participates in a  
10    first transaction with a first merchant, it is determined whether the transaction meets particular criteria, such as a minimum purchase price. If the customer satisfies the criteria, then the first merchant, known as an "outputting merchant", outputs an offer for a discount to the customer.

The offer defines conditions that the customer must meet in order to receive  
15    the discount. The customer may meet the conditions while participating in a second transaction with a second merchant, known as a "soliciting merchant". For example, the customer may be required to spend at least a minimum purchase price at the second merchant on a particular day. Once the conditions are satisfied, the discount or other bonus is awarded to the customer. In one embodiment, the discount is applied by crediting  
20    a credit card account used during the first transaction.

The present invention is particularly advantageous in that it allows various merchants to participate in mutually beneficial "co-branding" opportunities. Bonuses may

be paid for by the soliciting merchant or may be partially funded by both the soliciting merchant and the outputting merchant based on offers provided and/or offers redeemed.

Referring to FIG. 1, an apparatus 10 includes a server 12 that is in communication with store controllers 14, 16 and 18 by means of a network such as Microsoft First Datacorp ("MSFDC"). The server 12 directs the operation of, stores data from, and transmits data to the store controllers 14, 16 and 18. The server 12 is a computing device that can communicate with one or more store controllers. The server 12 may be a computer that is owned and/or operated by a credit card clearinghouse such as First Data Corporation.

Although three store controllers are shown in FIG. 1, any number of store controllers may be in communication with the server 12 without departing from the spirit and scope of the present invention. The store controllers 14, 16 and 18 are typically located in different stores, such as in different stores of a mall. Similarly, the store controllers 14, 16 and 18 may each control different catalog merchants. The store controllers may also be computers that direct an "online store", such as a web server that receives and processes orders for goods. The server 12 may perform many of the processes described below as performed by a store controller, especially those processes that are performed for more than one store controller. The server 12 may also store data that is used by more than one store controller.

Each store controller is in communication with one or more POS terminals. Specifically, the store controller 14 is in communication with POS terminals 20 and 22, the store controller 16 is in communication with a POS terminal 24 and the store controller 18

is in communication with POS terminals 26 and 28. The POS terminals may be, for example, the NCR 7454 manufactured by NCR Corporation or the IBM 4683 manufactured by International Business Machines. Each store controller directs the operation of, stores data from, and transmits data to the POS terminal(s) with which it is in communication. For example, as described below, each store controller may store a database of inventory to indicate to the POS terminals the prices of items purchased.

Referring to FIG. 2, the server 12 includes a processor 202 that comprises one or more conventional microprocessors such as the Intel® Pentium® microprocessor. The processor 202 is in communication with a data storage device 204, such as an appropriate combination of magnetic, optical and/or semiconductor memory. The processor 202 and the storage device 204 may each be (i) located entirely within a single computer or other computing device; (ii) connected to each other by a remote communication medium, such as a serial port cable, telephone line or radio frequency transceiver; or (iii) a combination thereof. For example, the server 12 may comprise one or more computers that are connected to a remote computer for maintaining databases.

The processor 202 is also in communication with an input device 206, a printer 208 and a display device 210. The input device 206 may comprise a keypad for transmitting input signals to the processor 202. Other types of input devices are known to those skilled in the art. The printer 208 is for registering indicia on paper or other material. The display device 210 is operative to display at least alphanumeric characters, and thus may be any of a number of known video monitors, liquid crystal displays ("LCD") or light

emitting diode ("LED") displays. Many types of input devices and display devices are known to those skilled in the art, and need not be described in detail herein.

The storage device 204 stores a server control program 220 for controlling the processor 202. The processor 202 performs instructions of the server control program 220 and thereby operates in accordance with the present invention and particularly in accordance with the methods described in detail herein. The server control program 220 furthermore includes program elements that may be necessary, such as an operating system and "device drivers" for allowing the processor 202 to interface with computer peripheral devices, such as the input device 206 and the display device 210. Appropriate device drivers and other necessary program elements are known to those skilled in the art and need not be described in detail herein.

The storage device 204 also stores (i) a merchant database 222, (ii) an offer criteria database 224, (iii) a discount database 226, (iv) an offer database 228, and (v) an offer summary database 230. In addition, the store controllers 14, 16 and 18 may query the server 12 to obtain information from the databases stored by the server. In another embodiment, one or more of the store controllers 14, 16 and 18 may store one or more of the databases 222, 224, 226, 228 and 230. The databases 222, 224, 226, 228 and 230 are described in detail below and depicted with exemplary entries in the accompanying figures. As will be understood by those skilled in the art, the schematic illustrations and accompanying descriptions of the databases presented herein are exemplary arrangements for stored representations of information. A number of other arrangements may be employed besides the tables shown. Similarly, the illustrated entries represent exemplary

information, but those skilled in the art will understand that the number and content of the entries can be different from those illustrated herein.

Referring to FIG. 3, the following description of the store controller 14 is likewise descriptive of the store controllers 16 and 18 (FIG. 1). The store controller 14 includes a processor 302 that comprises one or more conventional microprocessors such as the Intel® Pentium® microprocessor. The processor 302 is in communication with a data storage device 304, such as an appropriate combination of magnetic, optical and/or semiconductor memory. The processor 302 and the storage device 304 may each be (i) located entirely within a single computer or other computing device; (ii) connected to each other by a remote communication medium, such as a serial port cable, telephone line or radio frequency transceiver; or (iii) a combination thereof. For example, the store controller 14 may comprise one or more computers that are connected to a remote computer for maintaining databases.

The processor 302 is also in communication with an input device 306, a printer 308 and a display device 310. The input device 306 preferably comprises a keypad for transmitting input signals to the processor 302. The printer 308 is for registering indicia on paper or other material. The display device 310 is operative to display at least alphanumeric characters to the customer and/or cashier, and thus may be any of a number of known video monitors, liquid crystal displays ("LCD") or light emitting diode ("LED") displays. Many types of input devices, printers and display devices are known to those skilled in the art, and need not be described in detail herein.



The storage device 304 stores a store controller control program 320 for controlling the processor 302. The processor 302 performs instructions of the store controller control program 320 and thereby operates in accordance with the present invention and particularly in accordance with the methods described in detail herein. The store controller control program 320 furthermore includes program elements that may be necessary, such as an operating system and "device drivers" for allowing the processor 302 to interface with computer peripheral devices. Appropriate device drivers and other necessary program elements are known to those skilled in the art and need not be described in detail herein.

The storage device 304 also stores (i) an inventory database 322, and (ii) a customer database 324. In another embodiment, one or more of the POS terminals 20 and 22 may store one or more of the databases 322 and 324. The databases 322 and 324 are described in detail below and depicted with exemplary entries in the accompanying figures. As will be understood by those skilled in the art, the schematic illustrations and accompanying descriptions of the databases presented herein are exemplary arrangements for stored representations of information. A number of other arrangements may be employed besides the tables shown. Similarly, the illustrated entries represent exemplary information, but those skilled in the art will understand that the number and content of the entries can be different from those illustrated herein.

Referring to FIG. 4, the following description of the POS terminal 20 is likewise descriptive of the POS terminals 22, 24, 26 and 28 (FIG. 1). The POS terminal 20 includes a processor 402 that comprises one or more conventional microprocessors such as

the Intel® Pentium® microprocessor. The processor 402 is in communication with a data storage device 404, such as an appropriate combination of magnetic, optical and/or semiconductor memory. The processor 402 and the storage device 404 may each be (i) located entirely within a single computer or other computing device; (ii) connected to each other by a remote communication medium, such as a serial port cable, telephone line or radio frequency transceiver; or (iii) a combination thereof. For example, the POS terminal 20 may comprise one or more computers that are connected to a remote computer for maintaining databases.

The processor 402 is also in communication with an input device 406, a printer 408 and a display device 410. The input device 406 may comprise one or more of (i) a keypad for transmitting input signals to the processor 402; (ii) a card reader for reading magnetically-encoded information on cards passed therethrough, such as credit cards, frequent shopper cards and identity cards; (iii) an optical scanner for reading bar codes, such as bar codes registered on items of inventory; and (iv) a touch screen for generating signals that indicate when and where the screen has been touched, pressed or actuated. The printer 408 is for registering indicia on paper or other material, thereby printing receipts, coupons and vouchers as commanded by the processor 402. The display device 410 is operative to display at least alphanumeric characters to the customer and/or cashier, and thus may be any of a number of known video monitors, liquid crystal displays ("LCD") or light emitting diode ("LED") displays. Many types of input devices, printers and display devices are known to those skilled in the art, and need not be described in detail herein.

The storage device 404 stores a POS terminal control program 420 for controlling the processor 402. The processor 402 performs instructions of the POS terminal control program 420 and thereby operates in accordance with the present invention and particularly in accordance with the methods described in detail herein. The

5 POS terminal control program 420 furthermore includes program elements that may be necessary, such as an operating system and "device drivers" for allowing the processor 402 to interface with computer peripheral devices. Appropriate device drivers and other necessary program elements are known to those skilled in the art and need not be described in detail herein.

10 Referring to FIG. 5, a table 500 illustrates an embodiment of the merchant database 222 (FIG. 2). The table 500 includes entries 502, 504 and 506, each of which describes a merchant that owns, operates or controls a store controller. It will be understood by those skilled in the art that the table 500 may include any number of entries. The table 500 also defines fields for each of the entries 502, 504 and 506, which specify (i)

15 a merchant identifier 520 for uniquely identifying the merchant, (ii) a name 522 of the merchant, (iii) an address 524 of the merchant, (iv) a standard industry classification ("SIC") code 526 of the merchant, (v) billing instructions 528 indicating how the merchant will be billed, (vi) an amount owed 530 by the merchant, and (vii) a payment due date 532 on which the merchant must remit payment.

20 Referring to FIG. 6, a table 600 illustrates an embodiment of the offer criteria database 224 (FIG. 2). The table 600 includes entries 602, 604, 606 and 608, each of which describes criteria for defining when to provide an offer for a discount. The offer

is provided to a customer if the customer satisfies criteria while participating in a first transaction with a first merchant. The first merchant, known as an "outputting merchant", outputs the offer for a discount once the customer satisfies the criteria. It will be understood by those skilled in the art that the table 600 may include any number of entries.

5 The table 600 also defines fields for each of the entries 602, 604, 606 and 608, which specify (i) a criteria identifier 622 for uniquely identifying the criteria, (ii) a merchant identifier 624 that identifies the first (outputting) merchant, (iii) a required purchase price 626 that must be met in order to receive an offer for the discount, (iv) a time of the transaction 628 that must be met in order to receive an offer for the discount, and (v) a  
10 discount identifier 630 that uniquely identifies the discount.

The customer is required to participate in a transaction at the first merchant in order to receive the offer for the discount. The customer may also be required to participate in the transaction at an indicated time, and the transaction may be required to have an indicated purchase price and include an indicated item. For example, the entry  
15 606 indicates a discount identified by "D0001". A customer receives an offer for the discount "D0001" after having participated in a transaction for more than \$10.00 at merchant "M0001" on a weekday before 5:00 PM. Further criteria may be specified as will be understood by those skilled in the art.

Referring to FIG. 7, a table 700 illustrates an embodiment of the discount  
20 database 226 (FIG. 2). The table 700 includes entries 702, 704, 706 and 708, each of which describes a discount that may be offered to a customer of a first merchant and conditions which the customer must meet at a second merchant in order to receive the

discount. The discount is typically awarded once the customer participates in a transaction with a second (soliciting) merchant, subject to the customer meeting the conditions. It will be understood by those skilled in the art that the table 700 may include any number of entries. The table 700 also defines fields for each of the entries 702, 704, 706 and 708, which specify (i) a discount identifier 720 for uniquely identifying the discount, (ii) a discount value 722, (iii) a merchant identifier 724 that identifies the second (soliciting) merchant, (iv) a time of the transaction 726 with the soliciting merchant, (v) a required purchase price 728 at the soliciting merchant, and (vi) a required item to purchase 730, if any. The time of the second transaction, required purchase price at the soliciting merchant, and required item to purchase each represent a condition which the customer must meet in order to receive the discount. Many other conditions may be used as well.

The discount value is typically expressed as, for example, a percentage off the previous (first) transaction during which the offer for the discount was made. The discount value may also be expressed as a percentage off the current transaction. The customer is required to participate in a transaction at the second merchant in order to receive the discount. The customer may also be required to participate in a transaction at an indicated time, having an indicated purchase price and including an indicated item. For example, the entry 708 indicates a discount of five percent off the previous transaction. A customer receives this discount after having participated in a transaction for more than \$10.00 at merchant "M0001" on Saturday between 9:00 and 12:00.

Referring to FIG. 8, a table 800 illustrates an embodiment of the offer database 228 (FIG. 2). The table 800 includes entries 802, 804 and 806, each of which

describes an offer for a discount that has been provided to a customer. It will be understood by those skilled in the art that the table 800 may include any number of entries. The table 800 also defines fields for each of the entries 802, 804 and 806, which specify (i) an offer identifier 820 for uniquely identifying the offer; (ii) a discount identifier 822 that  
5 uniquely identifies the discount that has been offered; (iii) a criteria identifier 824 that uniquely identifies the criteria that the customer satisfied in order to be offered the discount; (iv) a customer identifier 826 that uniquely identifies the customer; (v) an offer status 828 which may indicate, for example, whether (and when) the offer is redeemed, unredeemed or expired; and (vi) a validity period 830 that indicates when the discount is  
10 able to be redeemed.

Referring to FIG. 9, a table 900 illustrates an embodiment of the offer summary database 230 (FIG. 2). The table 900 includes entries 902, 904, 906 and 908, each of which describes summary information about discounts that have been offered to customers. It will be understood by those skilled in the art that the table 900 may include  
15 any number of entries. The table 900 also defines fields for each of the entries 902, 904, 906 and 908, which specify (i) an discount identifier 920 for uniquely identifying the discount, (ii) a number of offers for the discount that were provided 922, (iii) a number of offers for the discount that were redeemed 924, (iv) a number of offers for the discount that were unredeemed 926 (neither redeemed nor expired), and (v) a number of offers for the  
20 discount that were expired 928 (not redeemed before the end of the validity period of the offer). The number of offers for the discount that were provided is the sum of the number of offers for the discount that were redeemed, the number of offers for the discount that

were unredeemed and the number of offers for the discount that were expired. Those skilled in the art will understand that the summary information may also be organized by offer or by offer and discount jointly, rather than by discount as illustrated in FIG. 9. The information in the offer summary database 230 may be updated periodically (e.g. once per  
5 day) to reflect offers that have expired or been redeemed.

Referring to FIG. 10, a table 1000 illustrates an embodiment of the inventory database 322 (FIG. 3). The table 1000 includes entries 1002 and 1004, each of which describes an item of inventory that is sold by a merchant. It will be understood by those skilled in the art that the table 1000 may include any number of entries. The table  
10 1000 also defines fields for each of the entries 1002 and 1004, which specify (i) an inventory identifier 1020 for uniquely identifying the item of inventory, (ii) a description 1022 of the item of inventory, (iii) a price 1024 for which the item of inventory is sold, and (iv) a quantity remaining 1026 of the item of inventory.

Referring to FIG. 11, a table 1100 illustrates an embodiment of the  
15 customer database 324 (FIG. 3). The table 1100 includes entries 1102, 1104 and 1106, each of which describes a customer of the merchant. The customer information is typically recorded by the customer database 324 upon becoming registered for a "frequent shopper program" of the store. It will be understood by those skilled in the art that the table 1100 may include any number of entries. The table 1100 also defines fields for each of the  
20 entries 1102, 1104 and 1106, which specify (i) a customer identifier 1120 for uniquely identifying the customer, (ii) a name 1122 of the customer, (iii) an address 1124 of the customer, and (iv) a credit card number 1126, if any, of the customer. In one embodiment,

the customer identifier may be the credit card number. Accordingly, a customer using a credit card could be identified even if he had not registered for a frequent shopper program.

In another embodiment, the customer identifier is read from a license plate of a car. Such an embodiment may be used to identify customers of a "drive-through". A method and

5 apparatus for reading a license plate to identify a customer are described in commonly-owned co-pending U.S. Patent Application Serial No. \_\_\_\_, entitled "METHOD AND APPARATUS FOR MAINTAINING A CUSTOMER DATABASE USING LICENSE PLATE SCANNING", Attorney Docket No. 98-059, filed on an even date herewith.

Referring to FIG. 12, a flow chart 1200 illustrates an embodiment of a  
10 method that is performed by the server 12 (FIG. 1) in accordance with the present invention. The server 12 creates in the discount database 226 (FIG. 2) an entry that indicates a soliciting merchant and a discount value (step 1202). Such an entry may be created, for example, in response to a request from the soliciting merchant or upon receiving a signal indicating that there are not many customers currently patronizing the  
15 soliciting merchant. The entry may also include conditions, such as time of transaction, purchase price and/or item to purchase.

The server 12 creates in the offer criteria database 224 (FIG. 2) an entry that associates the aforementioned entry in the discount database 226 with an outputting merchant (step 1204). This entry in the offer criteria database 224 may be created, for  
20 example, based on historical redemption of such discounts by customers of the outputting merchant. For example, if customers of merchant "A" have historically redeemed discounts at merchant "B", then merchant "A" may be a good candidate for an outputting



merchant. This entry in the offer criteria database 224 may be created, for example, based on a determination that there are many

The entry in the offer criteria database 224 may also include conditions, such as time of transaction, purchase price and/or item(s) to purchase.

5                   The entries created in steps 1202 and 1204 generally define a "routing" of customers from the outputting merchant to the soliciting merchant. When a customer participates in a transaction at the outputting merchant, he is offered a discount provided that he participates in a transaction at the soliciting merchant. Thus, the customer is given an incentive to participate in a transaction at the soliciting merchant.

10                   The server 12 receives transaction data representing a customer participating in a first transaction at the outputting merchant (step 1206). At step 1208, the server 12 outputs to the appropriate store controller, which in turn outputs to the POS terminal with which the customer interacts, an offer for a discount corresponding to the entry created in step 1202. The server 12 also creates in step 1208 in the offer database  
15 228 (FIG. 2) an entry indicating (i) both of the entries created in steps 1202 and 1204, (ii) a customer identifier that identifies the customer, and (iii) a validity period of the offer for a discount. The customer identifier may be a credit card number that identifies a credit card account used by the customer in the transaction.

                  The customer subsequently participates in a second transaction at the  
20 soliciting merchant, and the server 12 receives transaction data representing the second transaction (step 1210). The server 12 recognizes that the customer participating in the second transaction is the same customer that has been offered a discount. For example, if

the customer uses the same credit card (or other identifier such as a frequent shopper identifier) in this second transaction, the server 12 can search the offer database 228 to find entries that indicate the customer identifier. Of these entries indicating the customer identifier, the server 12 determines which include a discount identifier that indicates the soliciting merchant. The server selects the entry created in step 1208 (and possibly other entries) and therefrom determines the discount indicated by the entry created in step 1202.

In another embodiment, the server 12 recognizes that the customer participating in the second transaction is the same customer that has been offered a discount by a voucher printed during the first transaction. For example, a bar code printed on the voucher can be scanned by a POS terminal during the second transaction. The bar code can indicate the appropriate entry in the offer database, and so the server may determine the discount for which the customer is eligible.

In response, the discount indicated by the entry created in step 1202 is applied (step 1212) and the customer receives the benefit of the discount. Typically, the discount is applied by crediting the credit card account by the amount indicated by the discount. The offer summary database 230 (FIG. 2) is then updated to indicate that the discount has been redeemed (step 1214).

Referring to FIG. 13, a flow chart 1300 illustrates an embodiment of a method that is performed by the server 12 (FIG. 1) in accordance with the present invention. The server 12 receives transaction data and a credit card number from "merchant 1" (step 1302), typically via a POS terminal in communication with a store controller of "merchant 1". The credit card number identifies a credit card account that a

customer has used to pay for the transaction. The server 12 in response searches the offer criteria database 224 (FIG. 2) for entries that indicate "merchant 1" (step 1304). For example, the field 624 (FIG. 6) of the table 600 (FIG. 6) indicates an outputting merchant for each entry.

5                   As described above, each entry of the offer criteria database 224 also indicates criteria, such as a required purchase price or a required time of the transaction. The server 12 determines whether the transaction satisfies the criteria indicated by the entry (or entries) indicating "merchant 1" (step 1306). If not, then the transaction is processed conventionally (step 1308). If the transaction does satisfy the criteria, then the  
10   server 12 outputs an offer for the discount indicated by the entry (step 1310). As described above, the discount can be indicated by an entry in the discount database 226 (FIG. 2) which indicates a discount value as well as a soliciting merchant ("merchant 2") and conditions which the customer must meet at the soliciting merchant in order to receive the discount. The server 12 creates an entry in the offer database 228 of FIG. 2 (step 1312) to  
15   indicate the discount and the credit card number.

                  In another embodiment, the step 1310 may comprise outputting a plurality of offers, each for a different discount. In such an embodiment, the customer would select which discount he preferred. The operator of the POS terminal could then indicate the selected discount, and thus indicate a selected entry of the of the offer criteria database  
20   224.

                  Subsequently, the customer participates in a transaction with "merchant 2" and uses the same credit card account to pay for the transaction. Accordingly, the server

12 receives transaction data and the credit card number from "merchant 2" (step 1314), typically via a POS terminal in communication with a store controller of "merchant 2".

The server 12 in response searches the offer database 228 (FIG. 2) for entries that indicate "merchant 2" and the credit card number (step 1316). For example, the field 822 (FIG. 8)

5 of the table 800 (FIG. 8) indicates a discount, and the discount in turn indicates a soliciting merchant (e.g. in the field 724 of FIG. 7). Similarly, the field 826 indicates customer identifiers, which may be credit card numbers.

The entry (or entries) that indicate "merchant 2" and the credit card number likewise indicate conditions. For example, the field 822 (FIG. 8) of the table 800 (FIG. 8)

10 indicates a discount, and the discount in turn indicates conditions such as a required time of the transaction, a required purchase price and required items to purchase. If it is determined that the transaction with "merchant 2" does not satisfy the conditions (step 1318), then the transaction with "merchant 2" is processed conventionally (step 1308). However, if the conditions are satisfied, then the credit card account is credited with an

15 amount defined by the discount (e.g. as defined by the discount value field 722 of FIG. 7).

The present invention may also be advantageously employed in an embodiment where the customer conducts transactions remotely via a personal computer or similar device for communicating remotely with a store controller. For example, a customer may use his computer to access the world wide web sites of merchants, indicate

20 purchases, and pay by transmitting a credit card number to the merchants. In such an embodiment, any or all of the above-described databases could be stored (i) on the computer of an Internet service provider ("ISP"), (ii) on another computer on the Internet,

or (iii) locally on the consumer's computer (e.g. in the browser software or in a "cookie" or other file).

Referring to FIG. 14, an apparatus 1400 includes a user computer 1410 that is in communication with an Internet service provider computer 1420. The user computer  
5 1410 is typically a personal computer operated by the customer and equipped to access the Internet or other electronic network. The Internet service provider computer 1420 is a computer that enables the user computer 1410 to access the Internet in a manner known in the art. The Internet service provider computer 1420 is in turn in communication through the Internet with a soliciting merchant computer 1430 and an outputting merchant  
10 computer 1440 in a manner known in the art. As is also known in the art, the soliciting merchant computer 1430 and the outputting merchant computer 1440 may control "web sites" that are respectively accessed by the user computer 1410 upon entering appropriate commands.

Referring to FIGS. 15A and 15B, a flow chart 1500 illustrates another  
15 embodiment of a method that is performed by the user computer 1410 (FIG. 14) in accordance with the present invention. The steps of this method may be performed in whole or in part by "browser" software, such as Netscape's Communicator® or Microsoft's Internet Explorer®, that is executed by the computer.

The user computer 1410 accesses the web site of an outputting merchant,  
20 "merchant 1" (step 1502) which allows customers to place orders online. The user computer 1410 receives transaction data and a credit card number from the customer (step 1504), and transmits the transaction data and credit card number to the outputting merchant

computer 1440 of FIG. 14 (step 1506). The credit card number identifies a credit card account that the customer has used to pay for the transaction. The customer may render payment in other ways besides identifying a credit card account to be charged.

Once the outputting merchant computer 1440 receives the transaction data,  
5 it determines whether the customer has satisfied criteria, if any, to qualify for an offer for a discount. If so, then the user computer 1410 receives data from the outputting merchant computer 1440 that indicates the discount (step 1508). The discount and any associated conditions are stored (step 1510), for example, in a cookie or other file on the user  
10 computer 1410 or on the Internet service provider computer 1420 (FIG. 14). The conditions may also be stored on the soliciting merchant computer 1430 (FIG. 14) or the outputting merchant computer 1440 (FIG. 14).

The user computer 1410 creates a link that displays an offer for the discount (step 1512). The link may be a hyperlink, banner advertisement, additional frame, new window, or other element on the web site of the outputting merchant. Alternatively, the  
15 outputting merchant computer 1440 may alter the web site that is accessed by the user computer 1410. If the customer wishes to take advantage of the offer and make a purchase from another (soliciting) merchant, the user computer 1410 receives a command from the customer to connect to the link (step 1514) and thus access the web site of the soliciting merchant, "merchant 2" (step 1516).

20 The web site of "merchant 2" likewise allows customers to place orders online. The user computer 1410 receives transaction data and the credit card number from the customer (step 1518), and transmits this transaction data and credit card number to the

soliciting merchant computer 1430 of FIG. 14 (step 1520). If the transaction with the soliciting merchant does not satisfy the conditions (step 1522), then the transaction is processed in a conventional manner (step 1524). Otherwise, the credit card account is credited (step 1526) with an amount defined by the discount.

5                   As described above, the discount is applied to the customer account upon completion of a second transaction at the soliciting merchant. However, in another embodiment of the present invention, the customer may be further required to complete another transaction at the first merchant. Accordingly, the customer would have to participate in a first transaction at a first merchant, a second transaction at a second  
10 merchant, and then a third transaction at the first merchant. Although the customer may be required to meet certain conditions during the third transaction, typically the customer need not be so restrained.

                  The foregoing embodiment is particularly advantageous in an embodiment where the customer participates in transactions on web sites accessed by his computer. For  
15 example, when participating in a first transaction at the web site of the first merchant, a link, such as a banner advertisement, may appear directing the customer to the web site of the second merchant. Upon participating in a transaction with the second merchant, another banner advertisement may appear directing the customer back to the web site of the first merchant. Upon accessing the web site of the first merchant again, the discount  
20 could be applied.

                  In another embodiment of the present invention, the customer may be required to participate in a transaction with more than two merchants. For example, a

customer may participate in a first transaction at a first merchant. In response, the customer may be offered a discount for consummating a second transaction at a second merchant and a third transaction at a third merchant. In such an embodiment, the second merchant and third merchant could both be soliciting merchants.

5           The present invention is also applicable to functions besides transactions. In one embodiment, a customer participating in a first transaction with a first merchant may be offered a discount for completing a survey, rather than for participating in a second transaction. The customer could be provided with a survey at the same (first) merchant or at another merchant.

10           For example, after participating in a transaction at a first web site, the first web site would output an offer for a discount in exchange for completing a survey at a second web site. A link to the second web site would be generated to allow the customer to easily access the second web site. Upon accessing the second web site, the customer would be presented with one or more survey questions, and would be prompted to provide  
15   answers to each questions. Upon providing an answer to all (or a minimum number of) survey questions, the discount would be applied.

          Although the present invention has been described with respect to a preferred embodiment thereof, those skilled in the art will note that various substitutions may be made to those embodiments described herein without departing from the spirit and  
20   scope of the present invention. For example, although the discount may be a credit applied to a credit card account, there are many other discounts, such as the transfer of electronic cash or frequent shopper points to the customer.



What is claimed is:

1. A method for providing a discount, comprising:  
receiving first transaction data representing a first transaction at a first merchant;  
determining whether the first transaction data satisfies a criterion;  
5 generating an offer for a discount if the first transaction data satisfies the criterion,  
the discount including a condition and a second merchant; and  
outputting an indication of the offer.
2. The method of claim 1, further comprising:  
receiving second transaction data representing a second transaction at a second  
10 merchant;  
determining whether the second transaction data satisfies the condition; and  
applying the discount to a customer account.
3. The method of claim 1, further comprising:  
receiving a credit card number that identifies a credit card account.
- 15 4. The method of claim 3, in which the step of applying the discount comprises:  
crediting the credit card account.
5. A method for providing a discount, comprising:

receiving transaction data representing a first transaction at a first merchant, the transaction data including a credit card identifier that identifies a credit card account;

determining, based on the transaction data, a retroactive discount and a second merchant, the retroactive discount to be applied to the credit card account if the consumer

5 consummates a second transaction at the second merchant; and

outputting an indication of the retroactive discount and the second merchant.

6. The method of claim 5, further comprising:

receiving second transaction data representing a second transaction at a second merchant;

10 determining whether the second transaction data satisfies the condition; and  
applying the discount to a customer account.

7. The method of claim 5, in which the step of applying the discount comprises:  
crediting the credit card account.

8. A method for providing a discount, comprising:

15 receiving transaction data representing a first transaction at a first merchant, the transaction data including a transaction price;

determining, based on the transaction data, a discount and a second merchant, the discount having a value based on the transaction price; and

outputting an indication of the discount and the second merchant.

9. A method for providing a discount, comprising:
- receiving transaction data representing a transaction at a first merchant, the transaction data including a customer identifier;
- determining, based on the customer identifier, whether the transaction data satisfies
- 5 a condition for a discount, the discount having a value based on a previous transaction price; and
- applying the discount to a customer account.
10. The method of claim 9, further comprising:
- determining the condition based on the transaction data.
- 10 11. A method for providing a discount, comprising:
- receiving transaction data representing a transaction at a first merchant;
- receiving a customer identifier;
- determining from the customer identifier a retroactive discount including a condition;
- 15 determining whether the transaction data satisfies the condition; and
- applying the retroactive discount to a customer account.
12. The method of claim 11, in which the customer identifier is a credit card number.
13. A method for providing a discount, comprising:

determining whether a customer has consummated a first transaction with a first predetermined merchant;

determining whether the customer has consummated a second transaction with a second predetermined merchant; and

5        providing a bonus to the customer if the customer has consummated the first transaction at the first predetermined merchant and the second transaction at the second predetermined merchant.

14.     The method of claim 13 in which the bonus comprises a credit to an account in an amount that is based on a transaction price of the first transaction.

10    15.    A method for providing a discount, comprising:  
         receiving first transaction data representing a first transaction at a first merchant;  
         determining, based on the first transaction data, a discount and a second merchant,  
the discount being applicable if the consumer consummates a second transaction at the  
second merchant;  
15        outputting an indication of the discount and the second merchant;  
         receiving second transaction data representing the second transaction at the second  
merchant after the step of receiving first transaction data; and  
         applying the discount.

16.     A method for providing a discount, comprising:

receiving first transaction data representing a first transaction at a first merchant,  
the first transaction data including a credit card identifier that identifies a credit card  
account;

determining, based on the first transaction data, a discount, the discount including a  
5 condition and a second merchant;

outputting an indication of the discount;

storing an indication of the discount and the credit card identifier in a database;

receiving second transaction data representing a second transaction at the second  
merchant, the second transaction data including the credit card identifier;

10 searching the database to select the discount based on the credit card identifier;

determining whether the second transaction data satisfies the condition; and

applying the discount to the credit card account if the second transaction data  
satisfies the condition.

17. An apparatus for providing a discount, comprising:

15 means for receiving first transaction data representing a first transaction at a first  
merchant;

means for determining whether the first transaction data satisfies a criterion;

means for generating an offer for a discount if the first transaction data satisfies the  
criterion, the discount including a condition and a second merchant; and

20 means for outputting an indication of the offer.

18. An apparatus for providing a discount, comprising:
- a storage device; and
  - a processor connected to the storage device,
  - the storage device storing a program for controlling the processor; and
  - 5 the processor operative with the program to:
    - receive first transaction data representing a first transaction at a first
    - merchant;
    - determine whether the first transaction data satisfies a criterion;
    - generate an offer for a discount if the first transaction data satisfies the
    - 10 criterion, the discount including a condition and a second merchant; and
    - output an indication of the offer.
19. A computer readable medium encoded with processing instructions for implementing a method performed by a computer for providing a discount, the method comprising:
- 15 receiving first transaction data representing a first transaction at a first merchant;
  - determining whether the first transaction data satisfies a criterion;
  - generating an offer for a discount if the first transaction data satisfies the criterion,
  - the discount including a condition and a second merchant; and
  - outputting an indication of the offer.
20. An apparatus for providing a discount, comprising:

means for receiving transaction data representing a first transaction at a first merchant, the transaction data including a credit card identifier that identifies a credit card account;

means for determining, based on the transaction data, a retroactive discount and a second merchant, the retroactive discount to be applied to the credit card account if the consumer consummates a second transaction at the second merchant; and

means for outputting an indication of the retroactive discount and the second merchant.

21. An apparatus for providing a discount, comprising:
- 10 a storage device; and
- a processor connected to the storage device,
- the storage device storing a program for controlling the processor; and
- the processor operative with the program to:
- receive transaction data representing a first transaction at a first merchant,
- 15 the transaction data including a credit card identifier that identifies a credit card account;
- determine, based on the transaction data, a retroactive discount and a second merchant, the retroactive discount to be applied to the credit card account if the consumer consummates a second transaction at the second merchant; and
- output an indication of the retroactive discount and the second merchant.

22. A computer readable medium encoded with processing instructions for implementing a method performed by a computer for providing a discount, the method comprising:

- receiving transaction data representing a first transaction at a first merchant, the
- 5 transaction data including a credit card identifier that identifies a credit card account;
- determining, based on the transaction data, a retroactive discount and a second merchant, the retroactive discount to be applied to the credit card account if the consumer consummates a second transaction at the second merchant; and
- outputting an indication of the retroactive discount and the second merchant.

10 23. An apparatus for providing a discount, comprising:

- means for receiving transaction data representing a first transaction at a first merchant, the transaction data including a transaction price;
- means for determining, based on the transaction data, a discount and a second merchant, the discount having a value based on the transaction price; and
- 15 means for outputting an indication of the discount and the second merchant.

24. An apparatus for providing a discount, comprising:

- a storage device; and
- a processor connected to the storage device,
- the storage device storing a program for controlling the processor; and
- 20 the processor operative with the program to:



receive transaction data representing a first transaction at a first merchant,  
the transaction data including a transaction price;

determine, based on the transaction data, a discount and a second merchant,  
the discount having a value based on the transaction price; and

5                   output an indication of the discount and the second merchant.

25.     A computer readable medium encoded with processing instructions for  
implementing a method performed by a computer for providing a discount, the method  
comprising:

                  receiving transaction data representing a first transaction at a first merchant, the  
10   transaction data including a transaction price;

                  determining, based on the transaction data, a discount and a second merchant, the  
discount having a value based on the transaction price; and

                  outputting an indication of the discount and the second merchant.

26.     An apparatus for providing a discount, comprising:

15               means for receiving transaction data representing a transaction at a first merchant,  
the transaction data including a customer identifier;

                  means for determining, based on the customer identifier, whether the transaction  
data satisfies a condition for a discount, the discount having a value based on a previous  
transaction price; and

20               means for applying the discount to a customer account.

27. An apparatus for providing a discount, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

5 the processor operative with the program to:

receive transaction data representing a transaction at a first merchant, the  
transaction data including a customer identifier;

determine, based on the customer identifier, whether the transaction data  
satisfies a condition for a discount, the discount having a value based on a previous

10 transaction price; and

apply the discount to a customer account.

28. A computer readable medium encoded with processing instructions for

implementing a method performed by a computer for providing a discount, the method  
comprising:

15 receiving transaction data representing a transaction at a first merchant, the  
transaction data including a customer identifier;

determining, based on the customer identifier, whether the transaction data satisfies  
a condition for a discount, the discount having a value based on a previous transaction  
price; and

20 applying the discount to a customer account.

29. An apparatus for providing a discount, comprising:
- means for receiving transaction data representing a transaction at a first merchant;
  - means for receiving a customer identifier;
  - means for determining from the customer identifier a retroactive discount including
- 5 a condition;
- means for determining whether the transaction data satisfies the condition; and
  - means for applying the retroactive discount to a customer account.
30. An apparatus for providing a discount, comprising:
- a storage device; and
- 10 a processor connected to the storage device,
- the storage device storing a program for controlling the processor; and
  - the processor operative with the program to:
- receive transaction data representing a transaction at a first merchant;
  - receive a customer identifier;
- 15 determine from the customer identifier a retroactive discount including a
- condition;
- determine whether the transaction data satisfies the condition; and
  - apply the retroactive discount to a customer account.

31. A computer readable medium encoded with processing instructions for implementing a method performed by a computer for providing a discount, the method comprising:

- receiving transaction data representing a transaction at a first merchant;
- 5 receiving a customer identifier;
- determining from the customer identifier a retroactive discount including a condition;
- determining whether the transaction data satisfies the condition; and
- applying the retroactive discount to a customer account.

10 32. An apparatus for providing a discount, comprising:

- means for determining whether a customer has consummated a first transaction with a first predetermined merchant;
- means for determining whether the customer has consummated a second transaction with a second predetermined merchant; and
- 15 means for providing a bonus to the customer if the customer has consummated the first transaction at the first predetermined merchant and the second transaction at the second predetermined merchant.

33. An apparatus for providing a discount, comprising:

- a storage device; and
- 20 a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

determine whether a customer has consummated a first transaction with a first predetermined merchant;

5                   determine whether the customer has consummated a second transaction with a second predetermined merchant; and

provide a bonus to the customer if the customer has consummated the first transaction at the first predetermined merchant and the second transaction at the second predetermined merchant.

10    34.    A computer readable medium encoded with processing instructions for implementing a method performed by a computer for providing a discount, the method comprising:

determining whether a customer has consummated a first transaction with a first predetermined merchant;

15                   determining whether the customer has consummated a second transaction with a second predetermined merchant; and

providing a bonus to the customer if the customer has consummated the first transaction at the first predetermined merchant and the second transaction at the second predetermined merchant.

20    35.    An apparatus for providing a discount, comprising:

means for receiving first transaction data representing a first transaction at a first merchant;

means for determining, based on the first transaction data, a discount and a second merchant, the discount being applicable if the consumer consummates a second transaction  
5 at the second merchant;

means for outputting an indication of the discount and the second merchant;

means for receiving second transaction data representing the second transaction at the second merchant after the step of receiving first transaction data; and

means for applying the discount.

10 36. An apparatus for providing a discount, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

15 receive first transaction data representing a first transaction at a first merchant;

determine, based on the first transaction data, a discount and a second merchant, the discount being applicable if the consumer consummates a second transaction at the second merchant;

20 output an indication of the discount and the second merchant;

receive second transaction data representing the second transaction at the second merchant after the step of receiving first transaction data; and  
apply the discount.

37. A computer readable medium encoded with processing instructions for  
5 implementing a method performed by a computer for providing a discount, the method comprising:  
receiving first transaction data representing a first transaction at a first merchant;  
determining, based on the first transaction data, a discount and a second merchant,  
the discount being applicable if the consumer consummates a second transaction at the  
10 second merchant;  
outputting an indication of the discount and the second merchant;  
receiving second transaction data representing the second transaction at the second  
merchant after the step of receiving first transaction data; and  
applying the discount.
- 15 38. An apparatus for providing a discount, comprising:  
means for receiving first transaction data representing a first transaction at a first  
merchant, the first transaction data including a credit card identifier that identifies a credit  
card account;  
means for determining, based on the first transaction data, a discount, the discount  
20 including a condition and a second merchant;

means for outputting an indication of the discount;

means for storing an indication of the discount and the credit card identifier in a database;

means for receiving second transaction data representing a second transaction at the  
5 second merchant, the second transaction data including the credit card identifier;

means for searching the database to select the discount based on the credit card identifier;

means for determining whether the second transaction data satisfies the condition;  
and

10 means for applying the discount to the credit card account if the second transaction data satisfies the condition.

39. An apparatus for providing a discount, comprising:

a storage device; and

a processor connected to the storage device,

15 the storage device storing a program for controlling the processor; and

the processor operative with the program to:

receive first transaction data representing a first transaction at a first merchant, the first transaction data including a credit card identifier that identifies a credit card account;

20 determine, based on the first transaction data, a discount, the discount including a condition and a second merchant;



- output an indication of the discount;
- store an indication of the discount and the credit card identifier in a database;
- receive second transaction data representing a second transaction at the
- 5 second merchant, the second transaction data including the credit card identifier;
- search the database to select the discount based on the credit card identifier;
- determine whether the second transaction data satisfies the condition; and
- apply the discount to the credit card account if the second transaction data satisfies the condition.
- 10 40. A computer readable medium encoded with processing instructions for implementing a method performed by a computer for providing a discount, the method comprising:
- receiving first transaction data representing a first transaction at a first merchant, the first transaction data including a credit card identifier that identifies a credit card
- 15 account;
- determining, based on the first transaction data, a discount, the discount including a condition and a second merchant;
- outputting an indication of the discount;
- storing an indication of the discount and the credit card identifier in a database;
- 20 receiving second transaction data representing a second transaction at the second merchant, the second transaction data including the credit card identifier;

searching the database to select the discount based on the credit card identifier;  
determining whether the second transaction data satisfies the condition; and  
applying the discount to the credit card account if the second transaction data  
satisfies the condition.

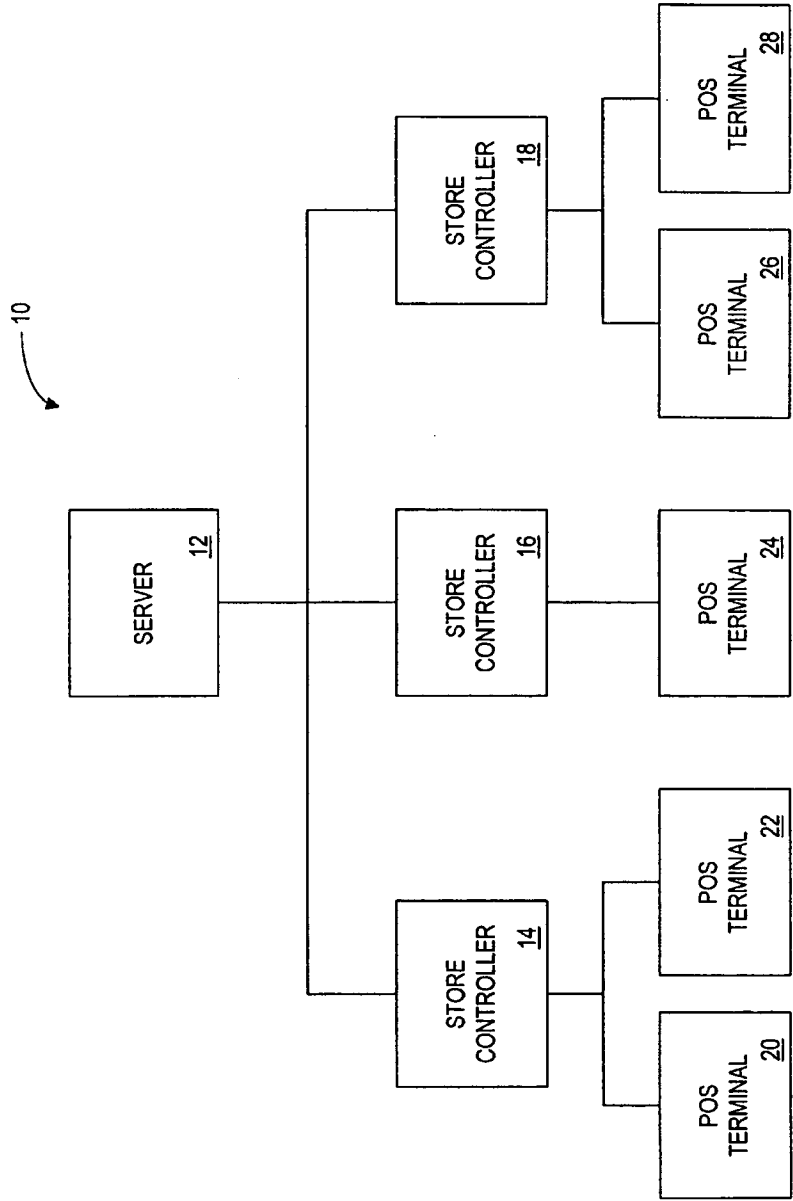


FIG. 1

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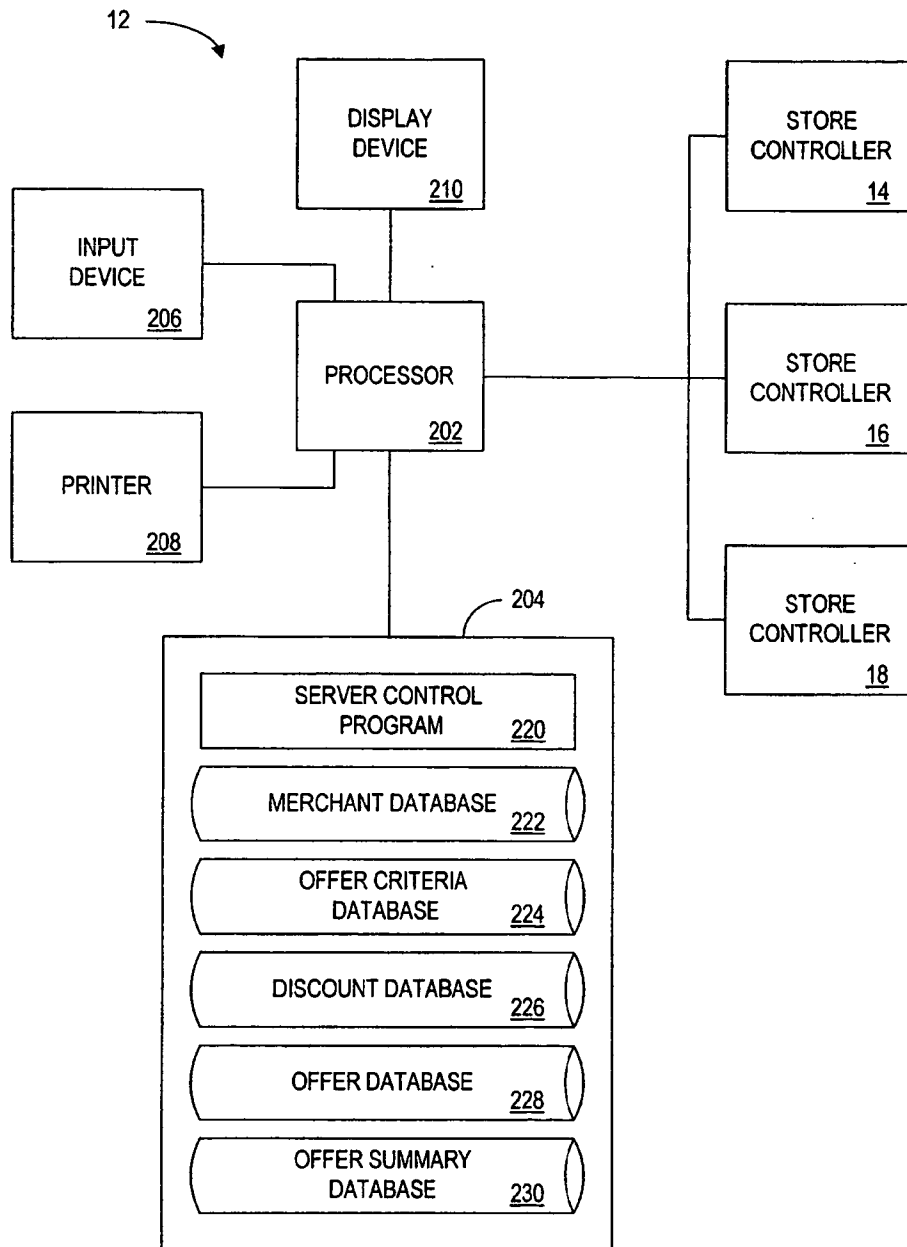


FIG. 2

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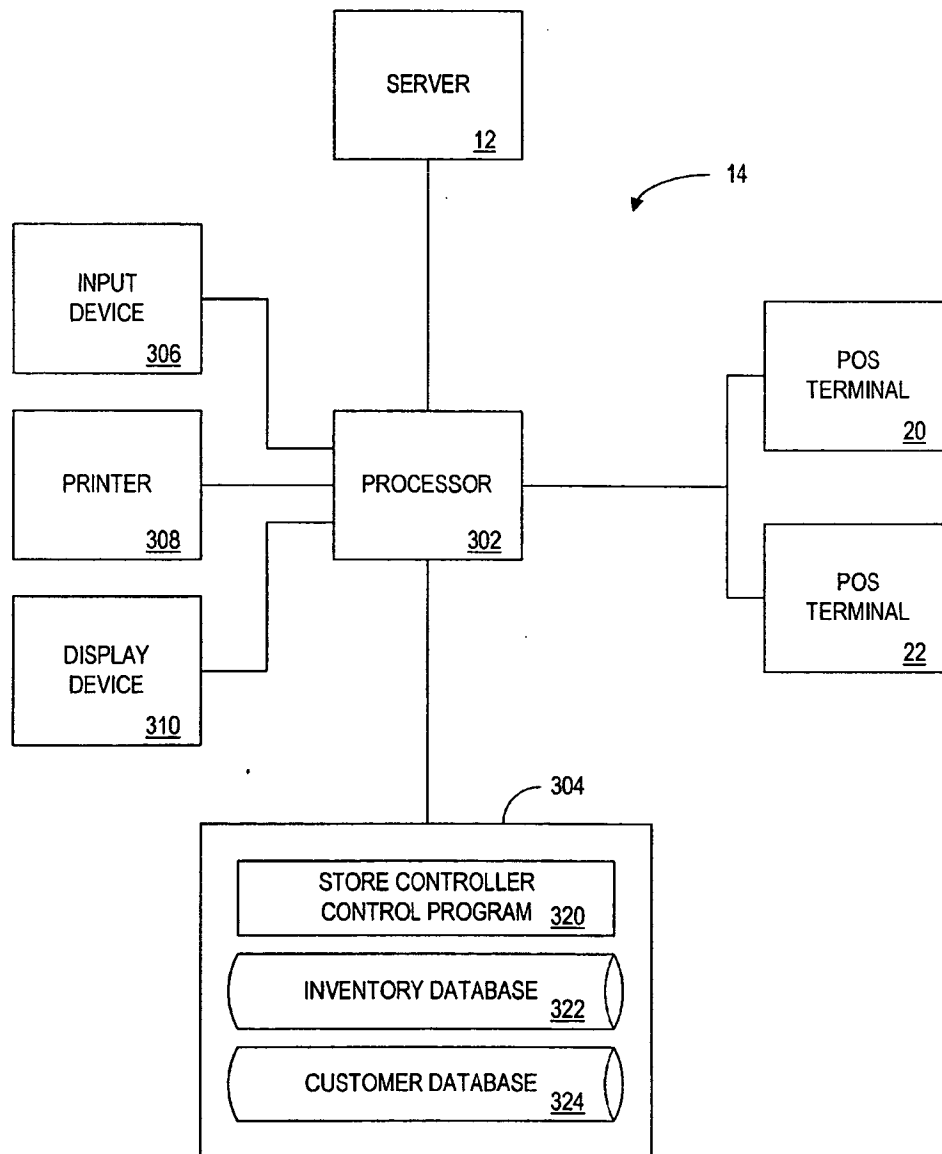


FIG. 3

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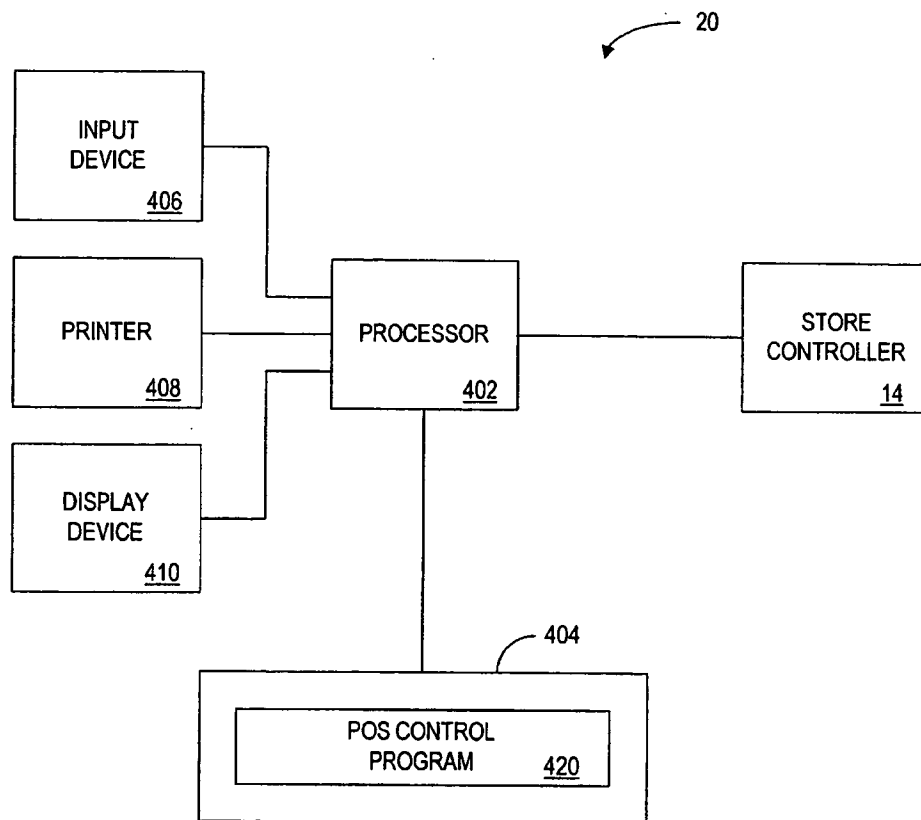


FIG. 4

500

MERCHANT IDENTIFIER	NAME	ADDRESS	SIC CODE	BILLING INSTRUCTIONS	AMOUNT OWED	PAYMENT DUE DATE
<u>520</u>	<u>522</u>	<u>524</u>	<u>526</u>	<u>528</u>	<u>530</u>	<u>532</u>
M0001	CORP. X	123 MAIN ST. CITY, USA	1111	BILL TO MAILING ADDRESS	\$807.00	11/10/99
M0002	STORE Y	8910 RIVER PL. SUBURB, USA	2222	BILL TO 1 MAIN ST. NOWHERE, USA	\$350.00	11/22/99
M0003	OUTLET Z	248 STATE HWY. TOWN, USA	3333	BILL TO MAILING ADDRESS	\$0.00	NONE

502

504

506

FIG. 5

600

CRITERIA IDENTIFIER 622	MERCHANT 1 IDENTIFIER 624	REQUIRED PURCHASE PRICE AT MERCHANT 1 626	TIME OF TRANSACTION AT MERCHANT 1 628	DISCOUNT IDENTIFIER 630
602 C0001	M0003	> \$20	ANY	D0004
604 C0002	M0003	ANY	ANY	D0003
606 C0003	M0001	> \$10	WEEKDAYS BEFORE 5:00 PM	D0001
608 C0004	M0002	ANY	SATURDAY & SUNDAY	D0004

FIG. 6



700

DISCOUNT IDENTIFIER 720	DISCOUNT VALUE 722	MERCHANT 2 IDENTIFIER 724	TIME OF TRANSACTION AT MERCHANT 2 726	REQUIRED PURCHASE PRICE AT MERCHANT 2 728	REQUIRED ITEM(S) TO PURCHASE 730
D0001	10% OFF	M0002	ANY	> \$5.00	NONE
D0002	\$15 OFF	M0003	ANY	NONE	ITEM # 12345678
D0003	1/2 OFF SECOND PURCHASE PRICE, UP TO \$40	M0003	MONDAY - FRIDAY	NONE	NONE
D0004	5% OFF	M0001	SATURDAY, 9:00 - 12:00	> \$10.00	NONE

702  
704  
706  
708

FIG. 7

800

OFFER IDENTIFIER	DISCOUNT IDENTIFIER	CRITERIA IDENTIFIER	CUSTOMER IDENTIFIER	OFFER STATUS	VALIDITY PERIOD
820	822	824	826	828	830
11001	D0003	C0001	NONE	REDEEMED 3/21/99	3/1/99 - 3/29/99
11002	D0001	C0004	1111-1111- 1111-1111	UNREDEEMED	3/20/99 - 4/20/99
11003	D0004	C0004	2222-2222- 2222-2222	EXPIRED 1/4/99	1/1/99 - 1/4/99

FIG. 8

900

DISCOUNT IDENTIFIER	NUMBER OF OFFERS PROVIDED	NUMBERS OF OFFERS REDEEMED	NUMBER OF OFFERS UNREDEEMED	NUMBER OF OFFERS EXPIRED
920	922	924	926	928
D0001	24	12	3	9
D0002	310	200	100	10
D0003	82	10	20	52
D0004	8	10	1	6

902 904 906 908

FIG. 9

1000

INVENTORY IDENTIFIER	DESCRIPTION	PRICE	QUANTITY REMAINING
1020	1022	1024	1026
12345678	MEN'S SHOES	\$150.00	32
12345679	TUBE SOCKS	\$8.50	185

1002

1004

FIG. 10

1100 ↗

CUSTOMER IDENTIFIER	NAME	ADDRESS	CREDIT CARD NUMBER
1120 99123	1122 DEAN GREEN	1124 5500 MAIN ST. CITY, USA	1126 -
1102 99124	1104 DAMASCUS LEK	829 STATE ST. SUBURB, USA	1111-2222-3333-4444
1106 99125	JOHN GOODE	342 PROSPECT ST. TOWN, USA	-

FIG. 11

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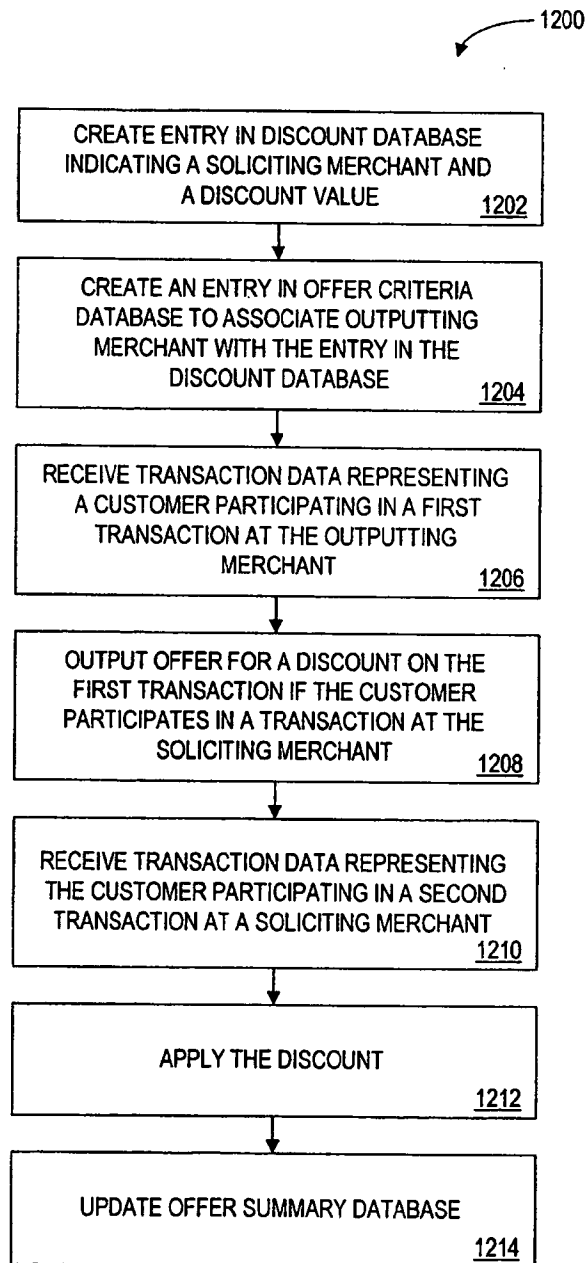


FIG. 12

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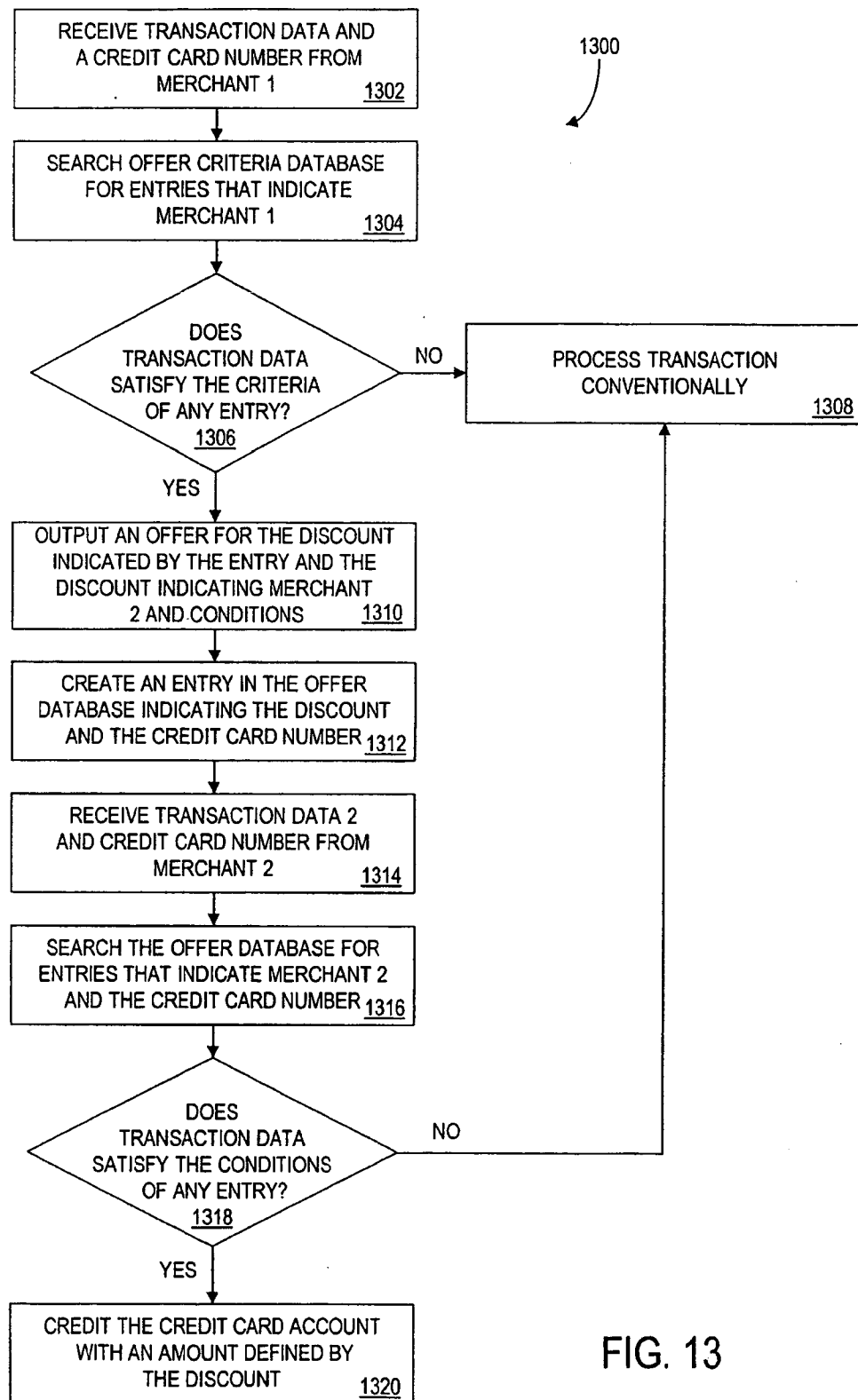


FIG. 13

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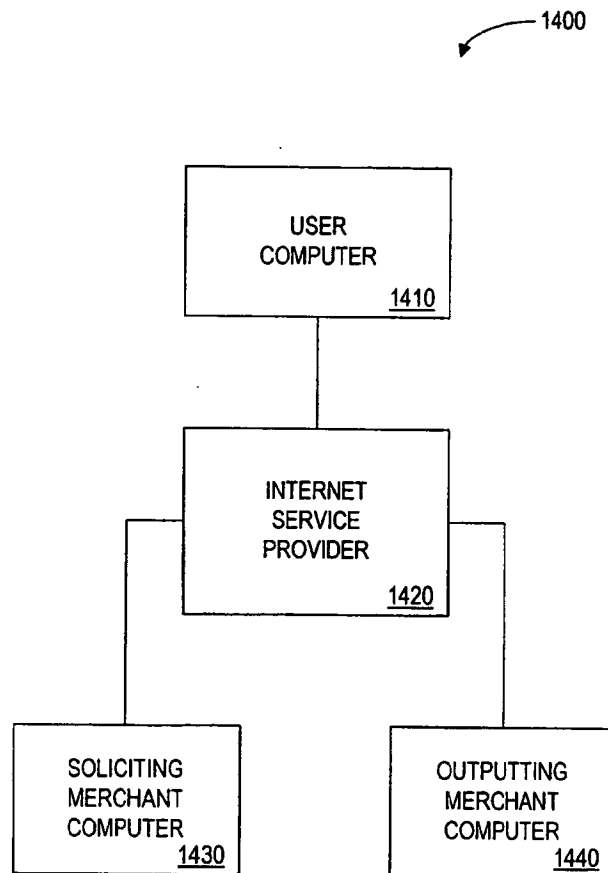


FIG. 14



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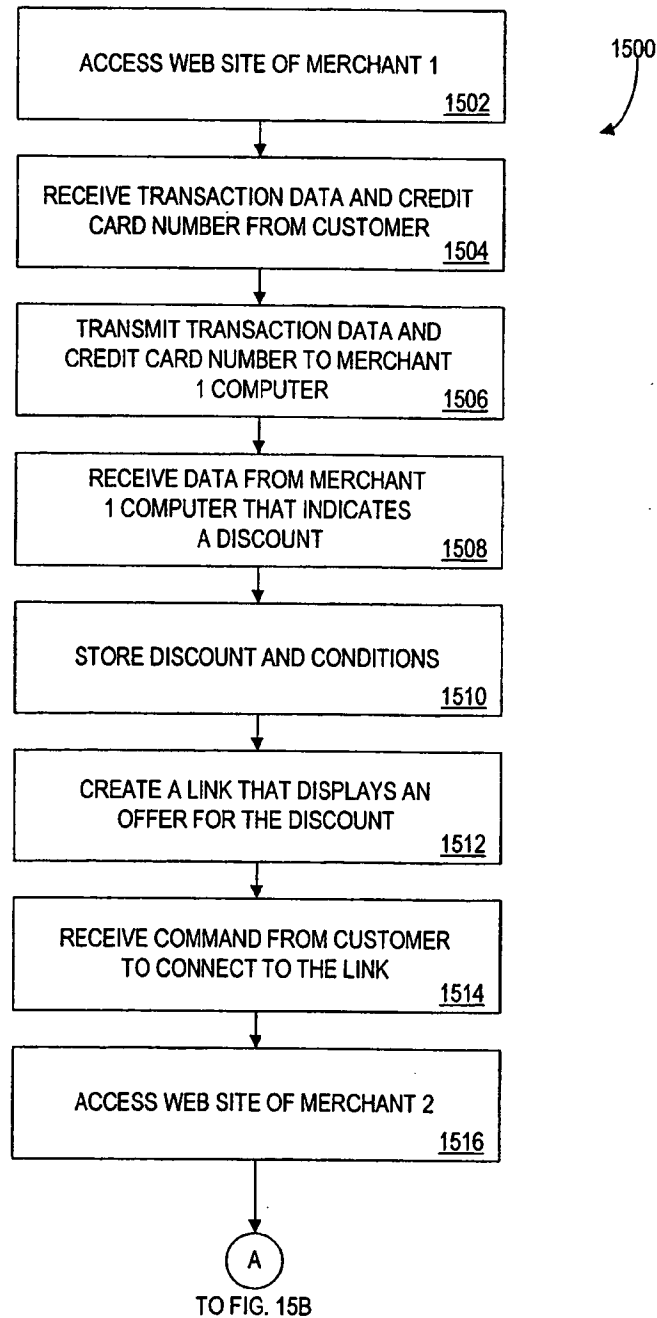


FIG. 15A

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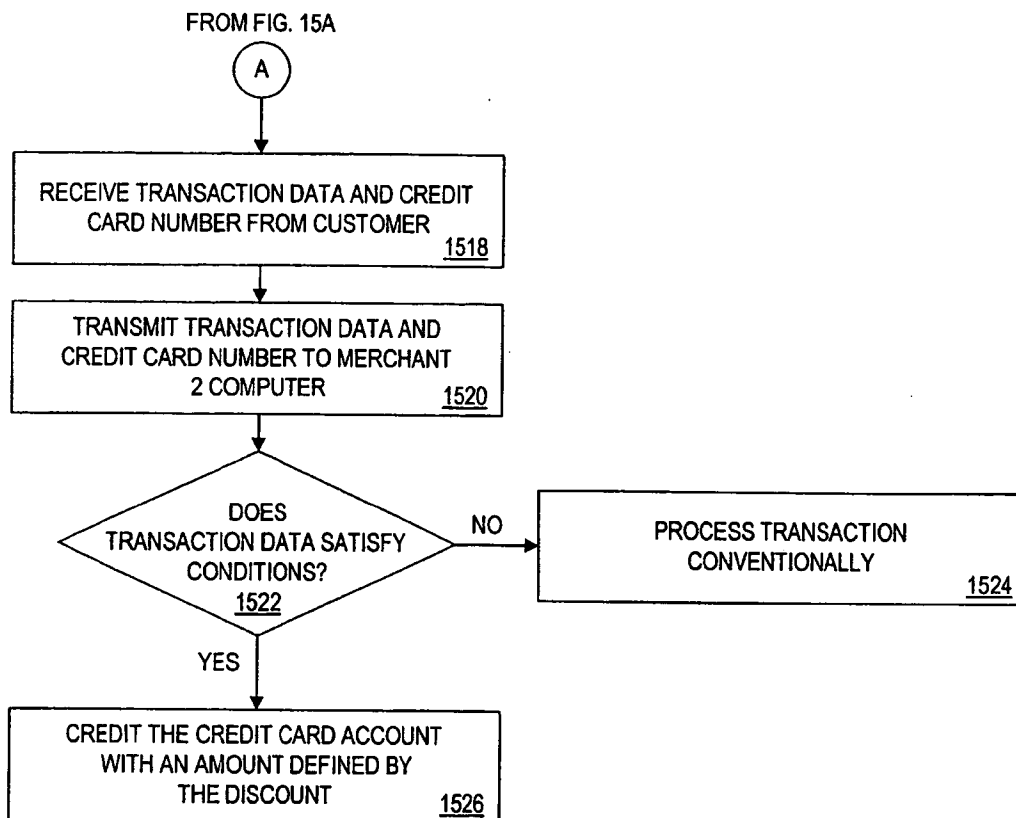


FIG. 15B

# INTERNATIONAL SEARCH REPORT

Int. Appl. No.

PCT/US 99/21720

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 06050 A (FIRST DATA CORP) 12 February 1998 (1998-02-12) abstract; claim 1 page 1, line 4 - line 12 page 2, line 18 - line 28 page 3, line 15 -page 4, line 7	1-40
X	WO 98 28699 A (MERIDIAN ENTERPRISES INC) 2 July 1998 (1998-07-02) abstract page 1, line 10 -page 2, line 23 -/-	1-40

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

16 March 2000

Date of mailing of the international search report

23/03/2000

Name and mailing address of the ISA

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Authorized officer

Suendermann, R

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/21720

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>US 5 537 314 A (KANTER MARK W)  16 July 1996 (1996-07-16)  abstract; claim 1  column 6, line 49 - line 67  column 7, line 25 - line 40  column 8, line 50 - column 9, line 30  column 16, line 35 - column 17, line 22</p>	1-40

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/21720

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9806050 A	12-02-1998	AU 3969197 A EP 0978076 A	25-02-1998 09-02-2000
WO 9828699 A	02-07-1998	AU 3497397 A CA 2210218 A	17-07-1998 24-06-1998
US 5537314 A	16-07-1996	NONE	